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Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 82

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DANGERS SEEN IN FOREIGN USE OF EXPORTED URANIUM

Military Application

Melbourne THE AGE in English 16 Dec 80 p 1

[Text] Adelaide.--Australia's ambassador-at-large for nuclear matters, Mr Justice Fox, yesterday warned that there was a risk that Australian uranium would be diverted for military purposes.

Mr Justice Fox said Australia's safeguards would be hard to police, and if they were defied there was little the Government could do.

He told the parliamentary select committee on uranium, meeting in Adelaide: "There is risk that plutonium made from our uranium may be diverted for military use. It's a problem for the whole world, not just Australia."

He said there were a number of cases where uranium had been diverted by escaping the safeguards. He gave as an example a substantial consignment of uranium which went missing on the way from Belgium to Italy about 10 years ago.

He said that to avoid such diversions Australia had to be careful in selecting the countries to supply with uranium.

"We will supply only to NPT (nuclear proliferation treaty) countries and France which is a nuclear weapons State and which has stated that it will accept the safeguards," he said.

"Australian source material cannot be reprocessed without prior consent from Australia. This provision has difficulties in relation to its enforcement."

If the circumstances of the buying country changed and no longer met Australian requirements, the Government would stop supplying that country. But here again, he said, there was an "enforcement problem with finding out if there is any change in programme and stability."

He said there was also a tracing problem. "Send it overseas, it is converted and enriched and produced, perhaps in different countries, mixed with uranium from other sources, put in a reactor, burned up, comes out as spent fuel, elements of which may have many origins."

"If something is done against the agreement, what can you do about it?" Mr Justice Fox asked.

He said that although safeguards have their virtues, they are not perfect. The argument, that if Australia provided its uranium there would be less inclination for countries to go into reprocessing, had weakened, he said.

"Americans were concerned to block reprocessing in all nuclear States. This was put to me in so many words by a leading US senator about the time the act was passed in 1978," Mr Justice Fox said.

It was a very serious measure for a country to go nuclear. "We should do everything possible to prevent proliferation. We can bring essential ingredients of bomb manufacture under control and if there is proliferation, we have to get machinery to stop or discourage it," he said.

"I don't myself believe there will be proliferation, I think we can control it within reasonable limits."

Mr Justice Fox has spent three years travelling as the Prime Minister's special envoy on nonproliferation matters. He is due to return to the ACT Supreme Court bench in the new year.

'Inadequate' Safeguards

Perth THE WEST AUSTRALIAN in English 18 Dec 80 p 56

[Text] Canberra: The Federal Government's safeguards policy on uranium exports was woefully inadequate, the Australian Democrats leader, Senator Don Chipp, said yesterday.

He said he strongly supported Mr Justice Fox's warning that Australian uranium could easily be diverted for military purposes.

According to the safeguards announced by the Prime Minister, Mr Fraser, Australian uranium could not be reprocessed without previous consent by Australia, Senator Chipp said.

But, short of massive interference in the recipient country's internal affairs, Australia could not possibly enforce this provision.

Australian uranium would be mixed with uranium emanating from other countries.

"We will not know which part of the spent fuel came from Australia--and is therefore banned from reprocessing--and which part came from some other source," he said.

"We are left in an impossible situation."

Mr Justice Fox, Australia's ambassador-at-large on nuclear matters, said on Monday that Australia's safeguards would be hard to police.

If they were defied, there was little that the Government could do about it.

Fox Memorandum

Melbourne THE AGE in English 22 Dec 80 p 1

[Article by Nigel Wilson: "Controls Needed To Avoid Nuclear War: Fox"]

[Text] Canberra.--Immediate moves towards international control of the materials used for nuclear weapons are needed to avoid the possibility of nuclear war, according to Australia's top safeguards adviser, Mr Justice Fox.

He argues also that Australia's recently announced safeguards covering the re-processing of uranium could cause trouble both with customer countries and the companies supplying the uranium oxide.

Mr Justice Fox's views are contained in a lengthy memorandum on nuclear non-proliferation which he has prepared during the past two years while acting as Australia's Ambassador-at-large for nuclear non-proliferation and safeguards.

Mr Justice Fox returned to Australia earlier this month and his term as ambassador expires on 31 December.

Australia requires potential customers of our uranium to enter bilateral agreements both for uranium oxide and the reprocessing of Australian-sourced uranium.

Mr Justice Fox says the bilateral system falls "far short of forming itself, or with other existing measures, a satisfactory global non-proliferation regime. The real threat of a nuclear war arising from or connected with the civil nuclear industry remains largely unaffected."

"In not a few cases (the) requirement constituting an attempt by one country to control the activities of another, or at least to keep them within limits which the supplier regards as 'safe' has been resented by consumers, and in practice cannot be expected to be very successful or enduring."

Problem

He notes that suppliers of the source material, uranium yellowcake, have a problem in identifying the material supplied through many subsequent stages and changes.

Bilateral agreements "are unlikely in practice to do much to meet the threat of proliferation where it is most likely to be found," he said.

The memorandum was completed only last week after Mr Justice Fox examined the policy statement on conditions of Australian consent to reprocessing made by the Foreign Affairs Minister, Mr Street, in Parliament on 27 November. The statement cleared the way for Australian uranium to be reprocessed overseas.

The statement said that buyer nations would be required to sign an agreement that the uranium would be reprocessed only for energy uses and that approved waste management standards would be met.

Mr Justice Fox said the reprocessing safeguards were intended to be selective as far as customer countries were concerned.

This aspect "may prove to be the part of the policy which is of the most practical value, although it may cause trouble both with consumers deemed to be an unacceptable risk (and there would have to be many of these) and with the commercial interests seeking to supply them," he said.

The memorandum indicates clearly that Mr Justice Fox believes the Australian Government should have put more weight behind international controls before coming down with its bilateral safeguards policy. He notes it does not follow that because a country can acquire or make a nuclear weapon or device that it will do so.

Consequences

"The known possession of a weapon can have seriously adverse political and economic consequences. Even creating a peaceful nuclear explosion can have those consequences.

"Machinery to deter or discourage can enhance the political and economic disadvantages and can be of considerable value in minimising the risk of nuclear war," he writes.

Mr Justice Fox calls for a scheme for international control over plutonium--not in use, or about to be used, for civil purposes--through the International Atomic Energy Agency. He also calls for international control over excess highly enriched uranium (more than 20 per cent enriched) through the IAEA.

The judge says that countries which already have nuclear weapons--the US, USSR, Britain, France and China--should move towards the separation of their military and civil facilities so that international scrutiny can be maintained over the civil plant.

Mr Justice Fox's memorandum does not explicitly criticise the Australian Government's policy on uranium exploitation, but it implies that more should have been done to ensure that the safeguards contained in bilateral agreements are effective.

CSO: 5100

AUSTRALIA

CONDITIONS SET FOR PROCESSING OF URANIUM OVERSEAS

French Bid

Melbourne THE AGE in English 28 Nov 80 p 1

[Article by Nigel Wilson: "Cabinet Limits Overseas Use to 'Energy Only'"]

[Text] Canberra.--The Federal Government has finally cleared the way for Australian uranium to be reprocessed overseas.

Buyer nations will be required to sign an agreement that the uranium will be reprocessed only for energy uses and that approved waste management standards will be met.

The conditions, announced yesterday after three years of international discussions, were immediately denounced by the ALP and the Australian Democrats. The Deputy Opposition Leader, Mr Bowen, said the Government had signed a blank cheque for uranium sales.

Mr Bowen said the conditions were weak and would be a threat to peace. He also said Australia would lose the benefits of the high price of enriched uranium.

The release of the conditions comes on the eve of Australia signing an agreement with France to supply uranium which will probably be reprocessed in France.

The Minister for Foreign Affairs, Mr Street, yesterday told Parliament the first step the Government would take before approving the reprocessing of Australian-origin nuclear material, would be the provision of detailed information by an interested customer country.

"The purpose of this will be to establish the country's need, within its overall energy strategy, for Australian origin nuclear material to be reprocessed," he said.

It is understood that this is the part of the proposed conditions which has satisfied the French Government. It has been adamantly opposed to signing any bilateral agreement with Australia which imposes direct controls on the further use of Australian uranium once it has been bought by France.

The Conditions

The main conditions for reprocessing are:

- Agreement in advance limiting reprocessing to energy uses.
- Agreement in advance for the management of waste material contained in the spent nuclear fuel.
- Case-by-case consideration of request for consent for other peaceful non-explosive purposes including research.
- Storage and use of plutonium of Australian uranium separated from spent fuel not to cause proliferation damages.
- Provision for consultation and review of the agreed conditions, and
- A commitment by customer countries to support the development of more effective control measures relevant to reprocessing including an international plutonium storage scheme.

The basic uranium export policy spelt out by Prime Minister, Mr Fraser, in May, 1977, still stands.

This demands no export of uranium without prior consent. The only reasons for giving this consent would be if the third country already has a bilateral uranium safeguards agreement with Australia, if it is also a member of the nuclear nonproliferation treaty and at the same time meets Australia's foreign policy considerations.

(This, officials hold, would stop France, for instance, exporting either uranium or reprocessed material originating in Australia to Iraq.) [as published]

The Australian decision on reprocessing safeguards was delayed for reports--presented to Parliament earlier this year--from the international nuclear fuel cycle evaluation.

Their publication is the last step in the completion of the Government's uranium export policy. The only study outstanding is into Australian participation in a domestic enrichment industry.

Approved

When France signs its safeguards agreement with Australia--possibly before the end of the year--it will join Britain, the U.S., South Korea, the Philippines and Finland as approved customers for Australian uranium.

Early next year it is expected the European Community nuclear agency, Eurotom, will sign a formal safeguards agreement with Australia.

Mr Bowen said: "What we have done as a Government is to take the lead in making the world an even more dangerous place.

"We are about the first government to abdicate consent and control over safeguards of this material...the commitment now is to get the sale."

The Australian Democrats deputy leader, Senator Colin Mason, said the safeguards outlined were pitifully inadequate.

They indicated "Australia would give consent to reprocessing spent nuclear fuel from Australian uranium into plutonium," the source material for atomic bombs.

Editorial Comment

Canberra THE AUSTRALIAN in English 28 Nov 80 p 6

[Editorial: "No Secret Deals on Uranium Exports"]

[Text] The Government's decision to amend the rules concerning safeguards on exports of uranium will no doubt cause debate--and angry debate in some quarters. The uranium export issue is an emotive one...but it is also one that needs close examination. Often--indeed, usually--it does not get it because of the emotionalism surrounding it.

The amendment to the rules which the Foreign Minister, Mr Street, announced yesterday does no more than allow importers of our uranium under the present agreement on safeguards to apply for permission to reprocess the end product of nuclear power generation. It does not follow that permission will be given. In fact, Mr Street said clearly permission would be granted only after the Australian Government had been convinced the reprocessed material would be used only for further power generation, with adequate safeguards and controls. He also made clear the Government would look at wider foreign policy areas, including the stability and peaceful intent of the applicant countries.

This sort of scrutiny is already applied to countries seeking to buy our uranium under the terms of the present agreement. And this is where argument on safeguards on uranium exports becomes largely academic. There is no way by which the Australian Government can guarantee that a recipient country will adhere to the terms of the agreement; there is no way by which it can properly police the agreement; and there is no way by which it can guarantee that a new government of the importing country, either elected or in power by coup, will continue to observe the terms of the agreement on uranium in stock.

In short, the only way Australia can ensure its uranium is not reprocessed is not to export it at all. [as published] But this course would be unreal--and wrong. There is, unfortunately, enough plutonium in the world, either already in nuclear weapons or available, to blow the globe to pieces several times. And, what is much more relevant, the world needs our uranium for power generation--a need which is growing and will continue to grow as undeveloped and underdeveloped countries seek nuclear power...not to make war but to create a better

standard of living for their people. We cannot deny them the material to do this. Nuclear power generation is a fact of life in the world we have the raw material for it; we must make it available. Australia will, it is true, profit from the trade—but that is not the most important point.

What the Government must do, and Mr Street will quieten a lot of fears if he undertakes quickly to do it, is to inform the people through Parliament about which nations seek to import our uranium; if and when they seek permission to reprocess it, and the Government's decision, with its reasons, on granting or refusing permission.

The Australian people will not countenance secret deals, either private or between governments, on this most delicate commodity.

Call for ACTU Ban

Canberra THE WEEKEND AUSTRALIAN in English 29-30 Nov 80 p 4

[Article by Wio Joustra: "Opposition Seeks ACTU Bans on Uranium Exports"]

[Text] The Federal Opposition has called on the ACTU to impose bans on the export of uranium oxide following the Government's decision to allow it to be reprocessed overseas.

The Opposition spokesman on environment and conservation, Mr West, made it clear yesterday that the ALP will fight the export decision. He said the Government was taking a huge step towards unbridled proliferation of nuclear weapons.

Mr West branded the decision, which was announced in Parliament on Thursday by the Minister for Foreign Affairs, Mr Street, as "an utter abrogation of national responsibility."

Mr West said: "By this latest betrayal, the Government has locked the Australian people into the logical result of the nuclear fuel cycle--the plutonium economy."

Buyers of Australian uranium oxide (yellowcake) will be allowed to reprocess spent nuclear material if they fulfil extra safeguard provisions.

High-level nuclear waste and plutonium can be separated in the process.

Plutonium is used in nuclear weapons and is one of the most toxic radioactive substances.

"I am appalled that nations such as France and Japan will be given the green light to produce weapon-grade plutonium from Australian uranium," Mr West said.

"France has not signed the Nuclear Non-Proliferation Treaty and continues to maintain its right to test weapons in the Pacific Ocean, while Japan has plans to dump nuclear waste in the Pacific."

Nonsense

It was nonsense for the Government to speak of having vague reprocessing agreements on the purpose of nuclear use and management of plutonium, and agreements to support the development of an international plutonium storage scheme.

There was no known way to effect adequate disposal of high-level waste.

Mr West said: "We can expect these decisions will give added thrust to the development of fast-breeder technology by Britain, West Germany, France, the United States and Japan, as well as the production of more and more plutonium before the development of a system of water-tight nonproliferation agreements and an adequate method of permanent waste disposal."

Other Criticism

Sydney THE SYDNEY MORNING HERALD in English 29 Nov 80 p 3

[Text] Canberra--Once the decision to mine uranium the go-ahead for reprocessing was a foregone conclusion, Professor C. B. Kerr, one of the commissioners on the Ranger Inquiry, said yesterday.

President Kerr, Professor of Preventive and Social Medicine at Sydney University, left no doubt that the Government's decision added to the risks associated with the nuclear industry.

"Greater nuclear weapons proliferation is the greatest hazard to peace and the availability of more material for weapons appears to increase that risk," he said.

Professor Kerr said the present policy of developing and selling uranium resources by Australia was quite incompatible with there being any safeguards for its later use.

"Any form of safeguards is valueless unless it is enforced--but we have no powers to enforce them.

"If you decide to export uranium commercially you can't then put conditions on it."

Professor Kerr said this was the case with all resources, however good the intentions were.

"What upsets me is that three and a half years after the Ranger report there has been no progress towards (settling) international safeguards arrangements."

Union opposition to the mining and export of uranium would be strengthened by the Federal Government's new policy on reprocessing, the president of the ACTU, Mr Cliff Dolan, said yesterday.

"This latest decision weakens an already fairly weak arrangement about safeguards once uranium is sold overseas," he said.

"It should harden the resolve of the ACTU to stop the mining and export of our uranium."

On Thursday the Government completed the uranium export policy first unveiled in 1977 when it announced approval for uranium to be reprocessed overseas.

Buyers of Australia's uranium will be given consent to reprocess if they arrange additional safeguards.

Unions who are prepared to accept ACTU policy should be more determined to carry out steps which were indicated at last week's executive meeting," Mr Dolan said.

These included action against equipment suppliers in Sydney, Newcastle and Port Kembla.

Mr Dolan said that from his experience overseas it would be difficult to assess how much plutonium would be produced by the reprocessing of spent fuel rods.

"The Government's new policy opens up the opportunity for anyone who buys Australian uranium to reprocess it and produce plutonium, which is the most deadly substance on earth."

However, there is serious doubt as to whether the ACTU's new strategy to hit equipment suppliers on the east coast will be any more successful than its previous approach.

Despite formal opposition, mining companies are continuing to mine, process and export uranium and unions affiliated with the ACTU are providing industrial coverage to the workers concerned.

The Opposition spokesman for environment and conservation, Mr Stewart West, attacked the go-ahead for reprocessing as being a huge step towards unbridled proliferation of nuclear weapons.

"I am appalled that nations such as France and Japan will be given the green light to produce weapon-grade plutonium from Australian uranium.

"France has not signed the nuclear non-proliferation treaty and continues to maintain its right to test weapons in the Pacific Ocean, while Japan has plans to dump nuclear waste in the Pacific Ocean."

Calling the decision a betrayal, Mr West said the Government had locked the Australian people into the logical result of the nuclear fuel cycle-- the plutonium economy.

"We can expect these decisions will give added thrust to the development of fast breeder technology by Britain, West Germany, France, the US and Japan

as well as the production of more and more plutonium before the development of a system of water-tight non-proliferation agreements and an adequate method of permanent waste disposal."

A spokesman for the Movement Against Uranium said yesterday the Government's decision to allow Australian uranium to be reprocessed showed that its safeguard policy was a complete sham.

The spokesman, Dr Joseph Camilleri, said "This step will remove any control we may have had over the way uranium would be used once it left our shores."

Dr Camilleri said France, one of the countries Australia was negotiating with, had not signed the non-proliferation treaty and was still testing nuclear weapons in the Pacific and selling sensitive nuclear equipment in Iraq.

Germany had contracted to sell a complete atom fuel cycle to Brazil, and Finland's spent fuel was likely to be re-processed in the Soviet Union, he said.

CSO: 3100

JAPANESE BALK AT CONDITIONS ON URANIUM SALES

Bargaining Expected

Melbourne THE AGE in English 26 Dec 80 p 1

[Article by David Broadbent: "Japan Queries N-Sale Terms"]

[Text] Canberra--Japan has indicated that it may resist restrictions on the reprocessing of uranium bought from Australia.

Japanese Foreign Ministry officials have indicated that they are prepared to bargain hard for the right to use uranium in any way they like to solve Japan's energy problems.

Contracts for the sale of up to 15,000 short tonnes of Australian uranium to Japan could be in jeopardy if the Japanese do not agree to conditions announced by the Minister for Foreign Affairs, Mr Street, in November.

Industry sources are reluctant to place a value on the contracts.

In November, Mr Street announced that buyers would be required to sign an undertaking that Australian uranium would be reprocessed only for energy uses and that approved waste management standards would be met.

The conditions also require case-by-case consideration of buyers' requests to use uranium for other peaceful non-explosive purposes, including research.

In Canberra yesterday Foreign Affairs officials said they had received no indication that Japan found the new guidelines unacceptable.

Tokyo reports yesterday indicated that the Japanese would be unhappy about Australian attempts to control what they considered to be peaceful uses for uranium. This was considered to be a domestic matter.

Clarified

The Japanese Foreign Ministry spokesman said that while Japan understood Australia's position it did not necessarily accept them.

The spokesman said Australian Government officials had clarified Australia's proposals during informal talks in Tokyo earlier this month. The talks were the latest in a series of contacts aimed at revising the bilateral atomic power agreement. The Japanese had listened to the explanations but had not accepted them.

Japanese Government sources said that tighter controls on uranium reprocessing were a serious matter to Japan which only has small uranium reserves.

Japan wanted to reprocess spent nuclear fuel to produce plutonium for the new generation of fast breeder reactors. This would establish a nuclear fuel cycle and lessen Japan's dependence on imported oil.

Japanese and Australian officials are expected to resume negotiations in February.

Firm Government Stand

Melbourne THE AGE in English 27 Dec 80 p 3

[Article by Nigel Wilson]

[Text] Canberra.--Senior Australian Ministers will press Japan to accept new safeguards on the reprocessing of uranium at a Ministerial council in Tokyo next month.

The Ministers will tell the Japanese that Australia does not intend weakening the safeguards, which were announced by the Foreign Affairs Minister, Mr Street, on 27 November.

Reports from Tokyo say that the new Australian safeguards have not been accepted by Japanese officials who are negotiating a new agreement with Australia on the supply of uranium.

Uranium contracts worth about \$1000 million in sales revenue would be threatened if Japan rejected the safeguards.

Senior Australian sources last night described the Japanese stance as a typical negotiating tactic. They expect Japan to fall into line with the safeguards as soon as Australia reaches an agreement with Euratom, the European Community's nuclear agency.

There is increasing optimism in Canberra that such an agreement will be reached early in the new year, clearing the way for a nuclear safeguards agreement with France--which is the nation most committed to nuclear power.

Officials believe it unlikely that Japan would hold out for terms which are easier than those accepted by Euratom, and, therefore, France. But there is concern in Canberra that the Japanese position could be seen as an attempt to force the Australian Government to change a policy which has only just been established after about three years' work.

This will be the view put by the five Australian Ministers--Mr Anthony, Mr Lynch, Mr Street, Mr Nixon and Senator Carrick--at the Australia-Japan Ministerial committee meeting on 21 and 22 January.

The safeguards topic will be part of a wide-ranging agenda covering international and national economic and financial matters, trade and Pacific Basin relations.

The safeguards threaten to be the most volatile issues discussed because of the increasingly vocal anti-nuclear lobby in Japan.

Yesterday, reports of the Japanese refusal to accept the reprocessing safeguards led the environmental organisation Friends of the Earth to describe Australia's safeguards policy as being in tatters.

The group has consistently opposed the mining of uranium and has argued that the demand for uranium is not as pressing, particularly in Japan, as those favoring mining claim it to be.

A research officer for the group, Mr John Hallam, said yesterday that the Japanese response to the Australian Government's attempts to impose restrictions on reprocessing showed Japan had no absolute need for Australian uranium.

"This means the Government has little chance of forcing them to abide by the reprocessing policy announced by Mr Street," he said.

He said Japan had supply contracts with Canada and South Africa capable of satisfying existing and planned nuclear power capacity to 1991. In practice these contracts would be more than enough because much of Japan's predicted nuclear capacity would not be in use by that time.

Australia's reprocessing safeguards demand that buyer nations sign an agreement that the uranium will be reprocessed for energy uses only and that approved waste management standards are set.

The country's top safeguards adviser, Mr Justice Fox, has implicitly criticised the safeguards. He feels there should be more emphasis on international controls of the nuclear material produced in the nuclear fuel cycle.

CSO: 5100

AEC CHAIRMAN CALLS FOR REACTORS TO BE BUILT IN 1981

Perth THE WEST AUSTRALIAN in English 4 Dec 80 p 11

[Text] Sydney: Australia should start building nuclear reactors next year, Sir Philip Baxter, a former chairman of the Australian Atomic Energy Commission, said yesterday.

It would need a nuclear power industry by the next decade.

He was speaking at the launching of "The Struggle for Power--What We Haven't Been Told and Why" by a Sydney author, Mr John Grover.

Sir Philip said that with diminishing reserves of fossil fuels, the world could not get by without nuclear energy.

Solar power could not be used for the many thousands of megawatts of power needed in industry.

He had no doubt that the vast majority of Australians were in favour of the mining and export of uranium.

The Labor Party had not pushed its policy of opposition to uranium very hard at the 1st Federal election "because they knew it was a loser."

Nuclear waste was a minor problem compared with waste from the coal-burning industry.

The coal industry polluted the atmosphere far more, involved far bigger costs in terms of health and contributed more radioactivity to the environment than the nuclear power industry.

Anomaly Seen

The book posed the question as to why there was organised opposition to nuclear power although it was safer, cheaper and cleaner than any other forms of power now used. This opposition in the West did not exist in underdeveloped or communist countries.

Sir Philip said the main beneficiary of opposition to nuclear power in the West and the maintaining of the dependence on Middle East oil was the Soviet Union.

The nuclear power industry was very safe today and had been fairly safe from the beginning.

A big amount of information published by anti-nuclear organisations was inaccurate and some of it downright untrue but it was written in a language that emotional members of the public could be affected by it.

Asked if there was any evidence that international oil companies were involved with anti-nuclear groups, Mr Glover said several British petroleum executives believed that Exxon had contributed to the anti-nuclear groups in the U.S.

Thousands of millions of dollars, most of the funding, seemed to have come from organisations such as the Rockefeller and Ford foundations.

Mr John D. Rockefeller had acquired his wealth through Standard Oil part of which became Exxon.

CSO: 5100

AUSTRALIA

URANIUM ENRICHMENT INDUSTRY MOVES CLOSER TO REALITY

Canberra THE FINANCIAL AUSTRALIAN in English 10 Dec 80 p 3

[Article by Wiu Joustra]

[Text] Australia moves a step nearer a \$500 million uranium enrichment industry next week.

The Federal Government will hold talks with Urenco-Centec, a European consortium which has proposed an enrichment plant in South Australia.

The delegation from the British, West German and Dutch consortium will be led by the under-secretary for nuclear energy in the UK Department of Energy, Mr Ivor Manly.

Mr Manly is thought to have been invited to Adelaide by the SA Premier, Mr Tonkin.

The Tonkin Government is considering a proposal by Urenco-Centec estimated to cost about \$500 million.

The State Government's Uranium Enrichment Committee supports the proposal.

Western Australia, Queensland and SA are all jockeying for leadership in the enrichment stakes.

Major Boost

Mr Tonkin has sought Federal Government support for SA to be the first to set up an enrichment industry at the start of the next decade.

But the Government has put the responsibility for deciding whether an enrichment industry would be viable in the lap of private mining companies.

The Uranium Enrichment Group of Australia--a consortium comprising BHP, CSR, Peko-Wallsend and Western Mining Corp--is yet to advise the Government on the feasibility of an enrichment industry.

Plans for the industry received a major boost earlier this year when the US gave a private undertaking of support for the project.

Urenco-Centec has been negotiating with the Federal and SA governments since 1973.

It uses the so-called gas-centrifuge process which is considered the most advanced technology in the industry.

International

The Federal Government has also been negotiating for a number of years with Japan to come in as a partner in an enrichment plant and to open its doors as a market for the enriched product.

Japanese enrichment technology lags behind processes used in Europe and the US.

Industry sources think the most likely development is a multi-nation venture, involving Urenco, the US, France, Japan and local interests.

The Urenco-Centec delegation will have talks in Canberra next week with officials from the Departments of Trade and Resources, National Development and Energy and Foreign Affairs.

CSO: 5100

URANIUM ENRICHMENT SET TO BEGIN IN SOUTH

Melbourne THE AGE in English 25 Nov 80 p 32

[Text] South Australia would go ahead with uranium enrichment facilities if the Federal Government-appointed Uranium Enrichment Group of Australia report was favorable, the State Mines and Energy Minister, Mr Goldsworthy, said yesterday.

"I look forward to this report being the next step in achieving agreement to go ahead with the establishment of enrichment facilities in Australia," he said.

"I am convinced that, given a favorable report by the UEGA with regard to policy and technology to be adopted in Australia, South Australia will be in a position to negotiate commercial and infrastructure agreements with Australian and international interests."

Mr Goldsworthy, who has just returned from a seven-week overseas tour, said opportunities were becoming available for South Australia to make a contribution to world requirements for nuclear power by the end of this decade. He said talks in Europe and Japan had confirmed the assessments of the UEGA that South Australia could provide a very favorable environment for uranium conversion [as published] and enrichment facilities. These would be competitive with the already established world producers.

"Preferred enrichment technology, prospective partners in the project scales of production, sites and timing are matters which will require decisions in the coming months if Australia is to take advantage of market opportunities which will be available by the end of this decade," he said. South Australia's proposals for the transfer of technology and for funds to establish conversion and centrifuge enrichment facilities had received strong encouragement, especially in Britain.

"Our work will allow us to respond quickly to any decisions of the Federal Government which follow the UEGA report," he said.

Mr Goldsworthy said he was impressed with the very stringent safeguards and security criteria being applied in all phases of the operation of these facilities to ensure both the health and safety of workers and proper use of the end product. "Vitrification and permanent deep burial of wastes have been demonstrated as being safely and satisfactorily applicable for use in due course," he said.

He said the visit also included consideration of renewable energy resources and the possibility of establishing a petrochemical industry in South Australia.

In Sydney, the Deputy Prime Minister, Mr Anthony, said that Mr Ronald Reagan's win in the American Presidential election augured well for Australia's uranium industry.

He said that Mr Regan's platform called for the accelerated use of nuclear energy through technologies that had been proved safe and efficient. Mr Anthony, speaking at a Sydney Chamber of Commerce lunch, said the country's advance into the world uranium market was on the move and Australia could not afford to stand still.

"We are approaching the point where additional uranium projects should be given the go ahead," he said. "Australia is in a strong position to meet the world's needs for nuclear materials in the 1980s and beyond. Work at Ranger in the Northern Territory is on schedule.

"Full-scale production of uranium, at a rate of 3000 tonnes a year, is expected to start as planned late next year.

Mr Anthony said that one of the most satisfying moments he had had was the news of the over subscription to the recent share issue by Energy Resources of Australia. "It was not only a massive vote of confidence in the Ranger project but a vote of confidence in the Australian uranium industry and in Government policies," he said.

CSO: 5100

AUSTRALIA

MINING COMPANY OFFICIAL URGES URANIUM DEVELOPMENT

Brisbane THE COURIER-MAIL in English 9 Dec 80 p 21

[Text] Australia should expedite the development of its uranium industry more vigorously than in the past, Pancontinental Mining Ltd chairman, Mr A. J. Grey, said yesterday.

Mr Grey told the annual meeting that the excessive delays in bringing ore bodies into production had played into the hands of competitors, particularly South Africa.

A significant part of the market in the past few years had been taken by South Africa only because Australian uranium was kept in the ground and it was taken at higher prices than would be available for producers for some time.

Mr Grey said that Pancontinental's Jabiluka project had been seriously disadvantaged in the uranium marketplace, since under Government policy, it had not been permitted to enter the market and make sales contracts.

Due to the delays in Government approvals for projects, Australia had missed the optimum part of the current uranium cycle.

Due to the drop in spot prices that had occurred in the past few months, US domestic production of uranium was expected to be considerably less than had been forecast.

This would provide an additional window into the market for Australian uranium which, because of its low cost structure, was somewhat less sensitive to the price drop than the high cost US producers.

Mr Grey said the most important event in respect of approval of the Jabiluka project had been the start of the Aboriginal land claim hearing on November 27.

Pancontinental had adopted a cooperative attitude towards the land claim.

The Land Commissioner had indicated that he expected the hearing to be completed by March next year.

CSO: 5100

WORKERS STRIKE, CLAIM LUCAS HEIGHTS REACTOR UNSAFE

Brisbane THE COURIER-MAIL in English 10 Dec 80 p 24

[Text] Sydney.--Striking maintenance unionists said yesterday the Australian Atomic Energy Commission's reactor at Lucas Heights should be shut down because of a lowered "safety factor."

The unions claimed the main reactor at the facility, just south of Sydney, had had no repair or maintenance work for five months.

But an AAEC spokesman said the reactor was perfectly safe.

About 72 fitters, electricians, plumbers, painters and carpenters at Lucas Heights went on indefinite strike last Friday, only hours before the AAEC was to stand down workers because of work bans in support of pay claims.

Up to 40 employees picketed outside the reactor facility yesterday and they claimed to have turned back up to 80 percent of services and supplies for the AAEC.

A spokesman for the five unions on strike, Mr Tom Shiner, a senior laboratory craftsman, said the men were concerned about a continuing lowering of the safety factor in the reactor.

"It has not had any real maintenance for five months," he said.

"There are some problems in the reactor and some of the secondary backup systems are not operating because some of the primary systems have failed.

An AAEC spokesman said. "The reactor is running in a perfectly safe manner. It is not running on any secondary circuits as has been suggested.

"The Commission would in no way compromise safety or operating procedures."

CSO: \$100

SETTLEMENT REACHED IN CASE OF URANIUM CARTEL SUIT

Sydney THE SYDNEY MORNING HERALD in English 26 Dec 80 p 11

[Text] The Westinghouse Electric Corporation and the Homestake Mining Company have resolved their legal dispute of the long-running multi-billion dollar uranium cartel suit.

Under the terms of the settlement, Homestake has agreed to pay Westinghouse \$US 2 million (about \$1.7 million) within 30 days.

It has also agreed to deliver 450,000 pounds of uranium to Westinghouse in March next year at \$15 a pound--a price which is substantially below the present spot price for uranium.

The settlement, announced on Wednesday eliminates Homestake from the cartel suit.

The suit was filed by Westinghouse in 1976 and involves 29 companies in the United States and other countries, including Australian companies--CRA, Queensland Mines, Pancontinental and Mary Kathleen.

Westinghouse is suing the companies through the US courts for damages alleged to have been caused by breaches of the nation's anti-trust tariff regulations.

The damages claim was earlier this year reported to total \$7 billion.

In its latest annual report, the directors of Mary Kathleen said: "Whilst Westinghouse has made unofficial statements that damages will exceed \$US 450 million and is likely to claim a far higher figure, no amount of damages is specified in the complaint.

"It is not practicable to specify or estimate the maximum amount for which the company could become liable." A US court of appeal later ordered that there was to be no hearing to determine the amount of damages against the defendants who did not appear before the court.

Mary Kathleen said it had been advised by lawyers that based on the present state of play a damages judgment should not be enforceable in Australia.

AUSTRALIA

URANIUM PROCESSING PROCEEDS DESPITE ACTU BAN

Perth THE WEST AUSTRALIAN in English 13 Dec 80 p 24

[Article by Paul McGeough: "Where Uranium Is Not an Ogre"]

[Text] The processing of uranium has become a fact of life in Kalgoorlie--despite ACTU policy.

Yellowcake is being produced at Western Mining Corporation's pilot treatment plant--and most of the work is being done by members of unions affiliated with the ACTU.

Production is at a rate of up to 30kg a day and the yellowcake is being stored in drums, probably to be sold within Australia.

The plant, on the outskirts of Kalgoorlie, is the first stage of WMC's \$320 million Yeelirrie venture. (A final decision on this is not expected for up to two years).

The plant has been treating ore at a rate of one tonne an hour since September and is expected to continue operating for another year.

The operation raises the question of the effectiveness of the ACTU's opposition to the uranium industry.

Is it merely words on paper or is it an effective policy to be implemented?

Last month, a meeting of the ACTU executive decided to step up action on the policy, with a call for bans on the movement of materials and equipment for uranium mining.

After the meeting the ACTU president, Mr Dolan, said that policy was still the same--a recommendation for a complete ban on all uranium projects.

The Kalgoorlie plant is manned by about 80 members of the Australian Workers' Union, who are being paid under the nickel and goldmining awards. Ore is being trucked 530km from Yeelirrie by members of the Transport Workers' Union.

The AWU has rejected the ACTU policy on uranium--provided that mining is done by the open-cut method--but the TWU supports the policy.

This week it was reported from Kalgoorlie that the industry has been accepted as a part of life and is not a topic of discussion--for or against--in hotels and other meeting places.

The Federated Engine Drivers and Firemen's Union, which is involved in the power-generation industry, is federally opposed to the uranium industry, but in WA its members have voted in a referendum to support the industry.

The union has not acted on the outcome of the referendum, conducted in 1978.

This week the WA TLC secretary, Mr Peter Cook, did not want to speculate on the attitudes of the AWU and members of the FEDFU.

"We will seek to implement ACTU policy," he said. "There is no guarantee that they will not support us.["]

CSO: 5100

AUSTRALIA

GUIDELINES ISSUED FOR HANDLING OF RADIOACTIVE ORES

Canberra THE FINANCIAL AUSTRALIAN in English 26 Nov 80 p 3

[Article by Nicholas Rothwell]

[Text] The latest triumph of bureaucracy has just been notched up by the Australian Mineral Development Laboratories with its new rules for labelling radioactive ores.

State authorities are issuing a series of instructions on how to transport any uranium or thorium you may have dug up, and what to do in case of spills or accidents.

There is just one snag--the instructions are confusing and will virtually assure many contraventions by well-meaning mining companies.

The rules are an attempt to bring Australian regulations into line with the standards set by the International Atomic Energy Authority.

Worried truckies will have a special notice displayed in their cabs--as long as they are within South Australia--telling them what to do if their radioactive load topples over.

It reads: "WARNING: this vehicle is carryine one or more labelled containers containing radioactive substances. In case of damage to the vehicle or to any of such containers communicate at once with the consignor and the SA Health Commission."

Bizarre

There aren't any instructions as to what the driver should do if he isn't near a telephone when his truckload spills.

Other stringent measures are intended to protect the public from "unnecessary exposure to radiation and also contamination of goods by radioactive material."

These rules, we are informed, already apply as "the basis" of the codes which are applied by air, rail and shipping authorities.

Exact sizes and colors for the labels which must be stuck on the radioactive packages have been provided by State authorities, anxious to conform to international safety standards.

Each package carrying nuclear material must be stamped with a lozenge-shaped white or yellow label with sides precisely 10 cm in length.

Some of the new safeguards are predictable--but some are fairly bizarre:

--General requirements of a commonsense kind apply for all packages--they must be reasonably waterproof, and packages must have a minimal contamination by radioactive dust when shipped.

--Packages must be labelled on two opposite sides of their exterior.

--Each category of package has its own standard label with the lettering "Radioactive" and the radiation warning trefoil in black plus red warning category numbers.

But the reader is warned: "These notes are a brief summary of somewhat complex regulations and apply only to the materials discussed. If in doubt contact your local authorities."

Would-be uranium transporters who "have difficulty" finding suitable labels are encouraged to contact the suppliers to the Australian Mineral Development Laboratories.

"Australia Post has its own special conditions for transmission of radioactive materials by post, and these should be available at Post Offices."

This last note may make people think for a moment before they open any bulky--looking packages around Christmas-time.

CSO: 5100

AUSTRALIA

RAILMEN REFUSE TO HAUL RADIOACTIVE SOIL TO DUMP

Sydney THE SYDNEY MORNING HERALD in English 3 Dec 80 p 14

[Text] Railwaymen have advised the State Rail Authority that they will refuse to carry radioactive soil from Hunters Hill to a proposed dumping site near Ivanhoe in the far west of NSW.

The vice-president of the Australian Federated Union of Locomotive Enginemen, Mr Bill Stannard, said yesterday that the men not only refused to "cart the stuff" but that if it were taken to Ivanhoe in any other way they would refuse to service the area.

"It is probably more hazardous to move the stuff around than to leave it where it is," said Mr Stannard. "If it is loaded on to rail trucks it will blow all over the place."

"Even with the most advanced technology in the world they don't know how to get rid of nuclear waste and the NSW Government is no exception."

"There is only one site for it and that is Hunters Hill, and it should remain there."

A spokesman for the Minister for Health, Mr Stewart, said last night that unions including the AFULE had been consulted on the matter about 18 months ago.

Transport by rail might be a secondary part of the removal plan.

"We will gladly meet these people. If they have an objection it might be soundly based or it might arise from some misconception," he said.

"There is no confrontation on this issue."

The people of Ivanhoe are none too happy about the prospect of having nuclear waste dumped on their doorstep.

Councillor Barry Whitchurch said landholders were worried about possible contamination of water. The council would ask for a public inquiry.

Mrs Kathleen Ward, who with her husband leases the proposed dumping site from the Government, said they had been told nothing about it and they first heard about it through reading the newspapers.

"They came and bored holes on the land here and the neighbouring property, Hazel Bell, in February," she said. [as published]

"Our main worry is the animals because the site is very near a water catchment area and it could also contaminate the underground water.

CSO: 5000

AUSTRALIA

PROBLEMS IN CLEAN-UP AT NUCLEAR TEST SITE DETAILED

Brisbane THE COURIER-MAIL in English 3 Dec 80 p 14

[Text] Canberra.--a team of top Australian scientists took 11 days using everything from plastic wrap and baby blue paint to a "borrowed" generator to remove nuclear waste from the atomic weapons test site at Maralinga in South Australia.

Apart from the obvious radioactivity dangers, the scientists encountered two other unexpected problems--heat and flies.

The day-by-day account of the removal of half a kilogram of plutonium from the site for shipment to Britain was contained in a report tabled in Federal Parliament yesterday by the Ionising Radiation Advisory Council.

The National Development and Energy Minister, Senator Carrick, disclosed that he had accepted a recommendation for another radiological survey at the site.

The advisory council had advised the government the area should be resurveyed for its levels of residual radiation, soil contamination and plutonium pollution no later than 1987.

The council said a decision should then be made on whether a further survey was necessary.

Removal of plutonium buried at Maralinga was carried out in February, last year.

The plutonium, buried there after British nuclear tests, was sent to Britain.

The main camp site was set up on February 17 about 1.4 km from the pit where the plutonium was buried.

"At the time of arrival the temperature was approximately 35 deg centigrade, and the party had its first taste of two of the problems which caused considerable difficulty throughout the operation--heat and flies," the report said.

Because of the heat, work was staggered during the day. This combined with stringent radiation, health and safety measures, made for a slower working pace.

According to the report, when the bin containing the plutonium was removed from the pit, the package was wrapped with plastic and sprayed with Permax which gave it an "overall baby blue hue."

The report said that because of the high temperatures, it was agreed that concreting over the pit would have to be done at night. The area was floodlit, but this caused some concern.

"For an operation subject to a security blanket, we did have some concern that the lights could be seen at a long distance in the clear desert night," the report said.

"We were finding our generating capacity stretched and, with the assistance of the Commonwealth Police, 'borrowed' an ancient generator from the village to supply power to the flood lights."

While the report went into the most intricate and complex detail of the operation in digging up the plutonium, it provided no detail about when or how the waste was shipped to Britain.

CSO: 5100

URANIUM MINE WASTE POSES THREAT TO WATER SUPPLY

Canberra THE FINANCIAL AUSTRALIAN in English 10 Dec 80 p 3

[Text]

THE Charters Towers water supply would become contaminated if any evaporation dam containing waste water from the Ben Lomond uranium mine burst as a result of heavy rain, the city's Mining Wardens Court was told yesterday.

The mining warden, Mr E.W. Lendich, was hearing evidence on the second day of the hearing of an objection to an application for a mining lease by Minatome Australia Pty Ltd.

A natural resource specialist and consultant to Minatome, Mr Ian Cowie, conceded that contaminated water would enter tributaries of the Burdekin River, Charters Towers' main source of water, should the evaporation burst due to heavy rain.

Mr Cowie was answering questions put to him by Mr Michael Drew, representing the objector, Mr Adrian Jeffreys, of the Townsville Regional Conservation Council.

The operations manager for Minatome, Mr Keith Poiwell, answering questions put by

Mr D.B. Jackson, QC, for Minatome, said the effects of intensive rain on the evaporation dam and two other dams at the proposed mine site would be minimal.

He told the court the evaporation pond, which will house waste water from the mine, would be designed not to accept drainage water.

The other two intermediate storage dams at the headwaters of two other creeks would be only minimally affected because of the very small catchment area they have, Mr Poiwell said.

Two leading Australian authorities on uranium mining and safety are attending the hearing as consultants. They are Dr George Watson, recently retired from the Australian Atomic Energy Commission, and an expert on the health and safety factors of uranium mining, and Mr Leslie Kemany, senior lecturer in nuclear engineering at the University of NSW.

Mr Kemany has had experience as a nuclear engineer and a background in the use of uranium as a fuel.

The hearing continues.

CSO: 5100

BRIEFS

HONEYMOON URANIUM DEPOSIT--North Kalgurli Mines Ltd has bought for \$5 million a 50 per cent interest in Teton Australia, the local subsidiary of the United States Teton group. Teton Australia has a 25.5 percent interest in the Honeymoon uranium project in South Australia as well as joint venture participation in other uranium prospects. As part of the agreement, Teton Australia will undertake general mineral exploration in Australia to be funded jointly by North Kalgurli Mines and Teton U.S. The Honeymoon uranium project, located in the Lake Frome area of South Australia, is a joint venture with M.I.M. Holdings Ltd. (49 percent interest) A.A.R. Ltd a wholly owned subsidiary of C.S.R. Ltd. (25.5 percent) and Teton Australia (25.5 percent). The Honeymoon deposit is estimated to contain 3384 tonnes of U308. Subject to obtaining the necessary approvals construction will start early in 1981 on a pilot plant using in situ solution mining techniques to extract the uranium. Subject to satisfactory pilot operations, the plant is expected to be expanded to full production after 1983. [Text] [Brisbane THE COURIER-MAIL in English 27 Nov 80 p 33]

SOLOMONS PROTEST--Honiara (AAP)--The Solomon Islands Government has told France it has learned "with much regret and dismay that France has once again exploded a nuclear device underground at Mururoa Atoll." The Foreign Secretary, Mr Bugotu, said in a message to the French Embassy in Port Moresby: "It is a great disappointment that France did not warn the Solomon Islands Government of its intention to carry out further tests since the two countries have established diplomatic relations." [Text] [Brisbane THE COURIER-MAIL in English 11 Dec 80 p 16]

NUCLEAR POLICY REVIEW--The Federal Government is planning a review of its Atomic Energy Act and has asked Queensland for its views on the existing legislation. State Cabinet today will discuss the matter to be raised by the Premier, Mr Bjelke-Petersen, who has been approached by Canberra. A combined departmental committee there has asked states for submissions about the functions and operations of the Act. Queensland has been told that the committee wants to present its report to the Prime Minister, Mr Fraser, by the end of this year. The legislation gives the Atomic Energy Commission, which runs the Lucas Heights reactor in Sydney, power to facilitate development of Australia's uranium resources. In Queensland, uranium is mined at Mary Kathleen and the French are interested in working deposits at Ben Lomond near Townsville. Opponents of this venture, by Minatone Australia Pty Ltd, fear that the French backers eventually will want to establish Australia's first uranium enrichment plant. Last night Mr Bjelke-Petersen would not discuss Cabinet's attitude. But Mr Bjelke-Petersen has a reputation for strenuously opposing Canberra decisions he considers will stymie development of mining ventures. [By Peter Morley] [Text] [Brisbane THE COURIER-MAIL in English 16 Dec 80 p 2]

POSSIBLE URANIUM FIND--Kratos Uranium NL has found significant traces of gold at its Northern Territory Pandanus Creek prospect. The company says in a report to shareholders it has also discovered encouraging shows of uranium mineralisation. The find was made in a 24-hole percussion drilling program carried out on a 100m grid along 4 km of the Westmoreland fault in the northern section of the prospect. The Pandanus Creek prospect is in the Gulf country near the NT-Queensland border. The prospect is controlled by Kratos, Minatome of France and Westinghouse of the United States. A tentative farm-in arrangement has been made with Brige Oil Ltd which, when it earns a 25 percent interest, becomes eligible to lift its stake to 50 per cent. The report says hole No WPD-45 assayed 10g of gold a tonne in the 1 m interval from 53m to 54m. This interval also assayed 1g of silver a tonne. In the 11m interval from 47m to 58m, hole No WPD-45 assayed 11b of uranium oxide a tonne. Other intersections assayed from 1.32 lbs to 4.09 lbs. Results from eight of the 24 holes drilled have not been received, but should be available before the end of the wet season when exploration can resume. Rain has made work impossible since November. [Excerpt] [Canberra THE FINANCIAL AUSTRALIAN in English 17 Dec 80 p 2]

FRENCH ENRICHMENT PLAN--A confidential report on French proposals to build a \$300 million uranium enrichment plant in north Queensland is being considered by the Queensland Government. French mining company Minatome has applied for a second lease covering 2035ha of land at Ben Lomond, near Townsville. [Text] [Canberra THE FINANCIAL AUSTRALIAN in English 22 Dec 80 p 8]

CSO: 5100

GANDHI ANSWERS LETTER FROM HIROSHIMA SURVIVOR

Calcutta THE STATESMAN in English 31 Dec 80 p 1

[Report on Letter to Tetsu Kitagawa]

[Text] New Delhi, Dec. 30.--Mrs Gandhi today wrote and told a 57-year-old Japanese survivor of the Hiroshima atom bomb blast that India stands for complete elimination of nuclear weapons.

In a letter to Mr Tetsu Kitagawa, the Prime Minister said India does not possess nuclear weapons and has no intention of developing or producing them.

The Japanese had sent letters to Heads of Governments possessing nuclear capacity, appealing to them to abolish nuclear weapons. The correspondent is an employee of the Hiroshima prefectural office and was only 1.2 km away from the epicentre of the Hiroshima blast 35 years ago.

Mrs. Gandhi, in response to Mr Kitagawa's appeal, said: "The people and the Government of India stand for the complete elimination of nuclear weapons. On the day the bomb was dropped over Hiroshima, my father, Jawaharlal Nehru, called it the "death-dealer" and since then, we have stood for complete disarmament under effective international control. In 1976, we called for total prohibition of the use of nuclear weapons and avoidance of a nuclear war as this would amount to a violation of the U.N. charter and a crime against humanity. Our own nuclear energy programme is dedicated to the development and utilization of nuclear energy for peaceful purposes. And this was our intention in carrying out a peaceful nuclear explosion in 1974. India does not possess nuclear weapons and has no intention of developing or producing them."

CSO: 5100

PAPER ALLEGES PAKISTANI SEARCH FOR N-EQUIPMENT

Bombay THE TIMES OF INDIA in English 31 Dec 80 pp 1, 15

[Article by K. Subrahmanyam]

[Text] The disclosure that Pakistan was caught attempting to circumvent the restrictions on the sale of sensitive equipment needed for its nuclear programme from Canada is yet another proof of the worldwide operation that country is conducting to acquire the necessary component items of machinery, instruments and parts to assemble both the uranium enrichment centrifuge and the plutonium reprocessing facility. [as published] The Royal Canadian Mounted Police seized equipment valued at \$42,500 at Montreal's Mirabel airport as they were being booked as airfreight to Pakistan.

The equipment was labelled as condensers and resistors, very common components of any complex electrical system. But these parts were to go into the assembly of an inverter, a complex piece of equipment used to regulate steady current supply to centrifuges. In fact, it was the purchase of inverters from the British firm, Emerson Company in 1978, that led to a question in the House of Commons on Pakistan's enrichment efforts and alerted the world to the Pakistani operation. [as published]

Thirty-one inverters had been purchased by that time and these were enough to run several thousand centrifuges. A further order worth \$2 million was stopped. Presumably Pakistanis were not going to be thwarted by the British embargo. Now their efforts to buy components for inverters have surfaced in Canada.

Investigations are reported to have revealed that before this airfreight was intercepted five shipments of similar electronic equipment had gone through. What appears to have put the Canadian police on the track of this shipment was the surveillance it kept on two employees of the Pakistani atomic energy commission, Mr. Anwar Ali and Mr. I. H. Bhatti, who visited Canada earlier this year and their contacts with the three men who made the shipment—Mr. Salam Elmenyawi (born in Egypt), Mr. Mohammed Ahmad (born in India) and Mr. Abdul Aziz Khan (from Pakistan) (all now Canadian citizens). [as published] Mr. Anwar Ali and Mr. I. H. Bhatti are colleagues of Dr. A. Q. Khan in the uranium enrichment plant.

/The modus operandi/ [in italics] adopted in respect of the acquisition and transfer of the equipment comes straight out of a James Bond novel. One consignment was addressed to Tech Equipment Company of Islamabad and the second of Khalid Jassim General Trading Company in Dubai. The police have established that the goods were to reach Pakistan. The sole director of this Dubai-based company is one Abdul Salan

(not the physicist Nobel laureate nor any relation of his) who operates from London. He is also a director of two companies called Weargate and Source Reliance International, which ordered the original inverters from Emerson Company in U.K. in 1978.

Even after the revelations regarding the purchase of the inverters, Source Reliance International managed to obtain from a Birmingham firm, called W. Canning, a metal finishing plant intended to be part of the uranium enrichment complex. [as published] THE FINANCIAL TIMES of London which unravelled the above interlinks, found the Dubai company to be a one-room show. It discovered in the hallway of the firm cartons labelled, "Mikron infra-red thermometers" shipped by Mikron Instruments company of New Jersey. They are normally used to measure temperatures of moving objects without contact and in conditions of intense radiation--perhaps uranium hexafluoride gas flow. These were purchased as the requirements of a cement plant in Sharjah.

Out of the two lines adopted by Pakistan to achieve nuclear weapon capability--uranium enrichment and plutonium reprocessing--the former is a matter of greater concern to the Western nations. When Pakistan is able to commission its reprocessing plant, it will need to break the IAEA safeguards and process the irradiated fuel rods of the Karachi nuclear plant (KANUPP). This cannot be hidden for long.

Secondly, the reactor itself will have to be operated at low burnup to reduce the plutonium-240 content because that causes predetonation problems and makes an explosion uncertain in yield. Though Western literature is full of references to reactor-grade plutonium being used for making bombs, the international fuel cycle evaluation report has pointed out that this is not likely to be the preferred route and no country has so far manufactured a nuclear arsenal through this route. A US Congressman who is also a nuclear engineer, Mr. Mike McCormack, has revealed that in 1965, the US conducted a nuclear explosion using reactor-grade plutonium and the experiment proved that this was unsuitable to make weapons of predictable and reliable yield, though it resulted in an explosion. [as published]

This experiment has been deliberately and misleadingly projected as proof that any third world country initiating a nuclear weapon programme can do it with reactor-grade plutonium. The expertise required in regard to conventional explosives technology to set off a nuclear explosion with reactor-grade material is of a distinctly higher order than what most of the third world countries possess and are likely to possess for some years to come.

There has been some press speculation about the Pakistanis replacing their irradiated fuel rods with dummy rods and reprocessing the irradiated fuel rods in the laboratory reprocessing plant in the PINSTECH (Pakistan Institute of Technology) to extract plutonium. It is not easy to so deceive a trained inspector. Therefore Pakistan is not likely to be able to conduct a nuclear explosion buy using the KANUPP plutonium without the world having sufficient notice. [as published] If it were to happen, it will mean a total collapse of the IAEA safeguards system with enormous implications for the non-proliferation regime.

Mr. Bhutto appears to have planned to repudiate IAEA safeguards and reprocess the fuel rods, using the French plant he had contracted to acquire.

In August, 1977, when South Africa had made preparations to have a nuclear test in the Kalahari desert, a Soviet satellite discovered it. Pressure from the US stopped that particular test.

Access to System [as published]

Some equipment for the reprocessing plant manufactured by ALCOM in San Angelo de Digiano in north Italy are said to have been exposed recently. ALCOM is a subsidiary of a company called BSL, the sub-contractors of SGN, the French company--the original contractor for the Pakistani reprocessing deal which was cancelled by France under pressure from the US.

The plant will have to be erected, commissioned and put on trial operation before it starts regular reprocessing. That may give some idea of the time frame involved for Pakistan reaching nuclear capability through the plutonium route.

Uranium enrichment, which is administered as project 706 by Maj-Gen. Anis Ali Syed as a defence project and is headed by Dr. A. Q. Khan, is not under any watch by IAEA. Its current status and stage of operation are shrouded in mystery. All that is known from the Dutch government reports on the "A. Q. Khan affair" is that the last batch of the 6,500 maraging steel tubes, which are to make up the bank of centrifuges, were shipped from Holland in September, 1969. The exact time of likely availability of weapon-grade enriched uranium will have to be calculated on the basis of lead time for the construction and commissioning of the Bank of centrifuges, the size of the bank, the recycling speed and the efficiency of the centrifuge. Very little information is available on these points.

Dr. A. Q. Khan has had access to the total centrifuge process system of the combined Anglo-German-Dutch plant at Almelo and had a complete list of more than a hundred sub-contractors of the URENCO plant and the list of equipment each had supplied. The international operation by Pakistan to acquire the equipment clandestinely is known to have been in operation for at least five years and the scale and extent of the operation may be judged from the bits and pieces of evidence that have surfaced in Germany, Italy, France, Holland, the UK, Canada and the US. What has surfaced can only be the tip of the iceberg. [as published]

An informed guess is that, based on indigenous enriched uranium, Pakistan may be able to conduct an explosion in the last quarter of 1981. But there is a catch here. It is well known that there is a black market in weapon-grade plutonium and uranium, the material having been diverted from the unsafeguarded weapon production reactors and enrichment facilities of the nuclear weapons powers.

One cannot rule out the possibility that the Pakistanis, who have displayed so much ingenuity in getting around the London club's trigger list and other export barriers, may also be attempting to get the readily available weapon-grade material. In that case, the explosion can take place even earlier.

INSTALLATION OF URANIUM FUEL BEGINS IN SECOND PLANT

Taipei CHINA POST in English 7 Jan 81 p 10

[Text]

Installation of uranium fuel in the first power generator of the Taiwan Power Co.'s second nuclear power plant started Monday, exactly 115 days ahead of schedule.

A spokesman for the state-owned company said the nuclear reactor, with a core of uranium, is expected to begin commercial operations by the end of June, further boosting Taipower's installed capacity in the face of increasing pressure from energy shortages.

Construction of the nuclear power station started in November 1975 and took less than 62 months before up uranium-filling, the spokesman said, adding the period in between is more than 16 months shorter than the time spent on a reactor of the similar type in the United States.

The shortened construction time has resulted from cancellation of holidays over the past years to complete the nuclear power generator at an earlier date to relieve Taipower's heavy dependence on oil to feed the thermal power plants, the spokesman pointed out.

Taipower's second nuclear power plant, like the first one, will have two nuclear power generators. The spokesman

said the second nuclear generator was 81.6 percent completed as of the end of November 1980, and will start uranium-filling within this year.

The two nuclear power generators of the second nuclear power plant are expected to save Taipower an estimated US\$800 million annually in oil bills, the spokesman said.

PHYSICIST PROPOSES SUSPENSION OF NUCLEAR PROGRAM

Rio de Janeiro GAZETA MERCANTIL in Portuguese 27-29 Dec 80 p 7

[Article by Delmar Marques, from Porto Alegre]

[Text] The course of the Brazilian nuclear program is again being discussed. "There is only one logical course for the Brazilian nuclear program: the definitive suspension of the eight plants ordered and conversion of the two existing ones--Angra-I and II--into technological research centers." And the Brazilian Government reportedly is not very far from adopting that type of solution proposed by Professor Alfredo Aveline of the Physics Institute of the Federal University of Rio Grande do Sul, who is also director-treasurer of the Brazilian Physics Association and member of the nuclear energy committee of the Brazilian Society for the Progress of Science (SBPC). According to him "the signs of a cooling off in the country's plans in the nuclear energy sector are visible and we hope that common sense will prevail."

The renegotiation of the timetables for the construction of the new units and the cut of appropriations for training nuclear energy specialists are signs of the symptoms of a new emphasis, he asserted.

In his opinion, a strong current of government experts, with the support of military sectors and groups of national businessmen, is beginning to impose its points of view, questioning the validity of the program. "They are people who are awakening from a dream--I would say, rather, from a nightmare--to discover that data were manipulated to convince society of the need for a completely unnecessary investment. We have already spent much money; it is time to stop," he declared. According to Aveline, the figures reinforce contrary arguments. There are not 235 nuclear plants in operation in the world, as the Brazilian program cited. According to a survey by Aveline, there are only 145 actually operating. Another 59 did go into operation but have been suspended, some more than 15 years ago, and 26 more have been definitely shut down, which in any case adds up to 230.

In addition, there are only 11 plants installed throughout the world with a capacity to produce more than 1,000 MW, similar to the Brazilian plants; 10 are experiencing various operational problems. "They try to make one believe that there are no problems with nuclear energy when practice demonstrates exactly the contrary. It is rare to find a unit operating perfectly," asserted Aveline,

"especially in projects of the size and type of those built in Brazil, with pressurized water.

"Among the 11 included in that category, only the oldest, the one in the United States, operating since 1973, maintains regular activity," he reported. "It is a unique case. However, another American unit, a sister plant to that one, has already experienced problems of a technical nature and was shut down for 1 year. The Salem-I, of 1,090 MW and also in the United States, was shut down at the beginning of 1980. There are 11 pressurized water plants and 6 manufacturers. Since there are no three plants alike in the world, what reliance can we have?" asks Aveline, who is currently involved in a meticulous survey for the SBPC.

It was in this context that Brazil purchased 10 German units, he observed, "and it was only in 1975, the year of the signing of the nuclear agreement with Brazil, that Germany itself put into operation its first pressurized water reactor (PWR) with an estimated power of over 1,000 MW. In fact, however, according to data revealed in 1979, that unit achieved only a 41.3 percent output (load factor). That plant is the Biblis-A, planned by KWU for 1,204 KM, exactly the same model purchased by the Brazilian Government. Biblis-B, activated in 1976, was supposed to reach 1,300 MW of power but its load factor stayed at 64.4 percent," said Aveline.

Aveline, who is working with official German data, says that he is apprehensive: "Did we make a good deal in buying that specific model? We cannot forget that another plant, that of Unterweser, built with different technology by Germany itself, went into operation in 1979 already with 80.6 percent of its load factor. Its total power is supposed to be 1,300 MW. In economic terms, would that not be a better option? The fact is that the country was hasty in signing the agreement and there was no need for it to go into that expensive adventure. Nuclear energy is still something new, most of the plants have gone into operation during the last 10 years. It would be more logical to invest in research," argues the physicist.

In his opinion, "the load factor achieved by the German units similar to the Brazilian ones is very low. In the ratio of cost for power generated, the country is going to pay double what it had anticipated per kilowatt." Aveline points out that in addition to being a bad deal, the operation involves great risks. Although there is no possibility of an explosive chain reaction, inasmuch as the concentration of uranium in the fuel is far below that necessary for such an eventuality, the potential dangers are great, Aveline asserts. "The volume of radioactive material handled throughout the whole nuclear fuel cycle is several times greater than that released by the Hiroshima and Nagasaki bombs and the possibility of its dispersal in the atmosphere is the main safety concern."

To operate the nuclear reactors of the Angra-II type, which has a nominal installed power of 1,232 MW, requires 103.5 tons of nuclear fuel, which consists basically of uranium oxide (UO₂), around 3 percent of Uranium-235. Recharging is done in such a way that every 12 months one-third of the fuel elements are replaced. Therefore, every year, 34.5 tons of fuel is replaced, an equivalent amount of spent material being removed. Aveline asserts that that amount of material is

375 times greater than that generated by the burning of 4 kilos of U-235 in the Hiroshima bomb, representing a proportionally greater amount of radioactivity.

With various graphics and charts on the table, including studies and statistics of the U.S. Atomic Energy Commission (AEC), Aveline shows the possible consequences of a serious accident: in case an extremely serious accident, it is estimated that there could be 3,300 deaths, 45,000 immediate injuries, and another 45,000 deaths from cancer in 30 years. Damage would amount to \$15 billion. But these are absolute numerical figures of little actual importance in view of the great number of uncertainties and arbitrary assumptions that are made in reaching those estimates. Suddenly, something happens that nobody had foreseen, as at Three Mile Island, and the risks increase considerably. The wind direction, the pressure conditions in the various atmospheric layers over the region, everything can have an influence. In short, all pure theory, he asserts.

In the United States, in 1979 alone, there were 1,878 incidents connected with safety in the nuclear reactors of that country: "There is much bad faith in discussing nuclear safety, not only here in Brazil but all over the world. The U.S. nuclear safety agency itself admits there is a manipulation of data to try to prove a safety that does not exist," he declared.

The economic and safety factors, the physicist points out, might lead Brazilian authorities to rethink the national nuclear energy program. He argues that in some years the country could develop its own technology; keep up with the advances made in the rest of the world; and, if need be, acquire packages of proven efficiency. "We opted," he said, "for a commercial program of doubtful economic viability since technically we do not have any guarantees of actual results. Brazilian scientific circles follow the development of the nuclear program with apprehension, hoping that there will be a return to common sense.

Nuclear Plants Actually in Operation

<u>Years in Operation</u>	<u>No of Plants</u>	<u>Average Power (MW)</u>
16-21	23	159
10-15	20	292
6-10	46	697
0-5	56	784
Total	145	--

Nuclear Plants That Went Into Operation and Suspended Activities

<u>Suspension</u>	<u>No of Plants</u>	<u>Average Power (MW)</u>
80-79	11	700
78-77	26	573
76-75	4	568
74-73	8	272
72-71	5	128
70-69	3	193

66-65
Total

2
59

85
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Nuclear Plants That Shut Down Definitely

<u>Years of Operation</u>	<u>No of Plants</u>	<u>Power (MW)</u>
0-2	4	10-75-110-75
3-5	7	59-25-27-20-17-17-5
5-12	12	237-237-70-61-40-10-9-5-4 30-ship
13	1	13
16	1	5
18	1	6
Total	26	--

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CIVIL DEFENSE MEASURES IN CASE OF NUCLEAR ACCIDENT OUTLINED

Rio de Janeiro O GLOBO in Portuguese 18 Dec 80 p 13

[Text] In a talk yesterday for Governor Chagas Freitas and all the secretaries of state, the director general of the General Department of Civil Defense (DGDC), Col Luiz Vieira de Abreu, listed a series of measures that should be adopted in the event of accidents at the Angra dos Reis nuclear plant. Among the measures, he cites the evacuation of the area, keeping the population informed, controlling drinking water sources, and destroying all contaminated food in the evacuation area.

As preventive measures, the colonel listed the delimitation of a security area around the plant, prohibiting any construction (already under study); the building of a service highway as an alternative to the Rio-Santos highway; and the construction of an airport outside 15-kilometer emergency area established by the plant.

In addition to the talk, the question of safety in the area is covered in a document titled "The Nuclear Problem in the State," which was forwarded to the governor and the secretaries.

The Measures

Following is the presentation by the director of civil defense regarding the nuclear plant:

"This is undoubtedly one of the most important subjects for the whole State Civil Defense System whether because of the sensitive and complex nature of its details, or of the international repercussion of its possible consequences, whether good or bad.

"With the installation of the Almirante Alvaro Alberto Nuclear Power Plant, Brazil, through the state of Rio de Janeiro, definitely entered the nuclear era. Despite the fact that the safety regulations adopted internationally for the operation of similar installations are quite stringent, there is always the possibility of an accident occurring. The case of Three-Mile Island showed us that the surrounding population can be affected.

"For that reason, the DGDC has been preparing exhaustively, making plans for a possible accident at the nuclear plant. The coordinated action of several official agencies, following previously laid out plans, is indispensable.

"As a result, the following plans emerged:

"a) Local Emergency Plan (PEL), under the responsibility of Furnas.

"b) External Emergency Plan (PEE), under the responsibility of support agencies: Secretariat of Public Security (SSP), COMDEC, 1st Army, 1st Naval District, COMAR, the National Institute for Social Security Medical Care (INAMPŞ), etc.

"c) General Emergency Plan (PGE), under the responsibility of the Regional Civil Defense Commission for the Southeast (CORDEC/SE) (Southeast Region states).

Phases

"The work of the system has been divided according to two different phases, namely:

"1st Phase: danger restricted to the plant limits, the latter being responsible for the necessary measures and CORDEC/SE being responsible for coordination of the support agencies the assistance of which becomes necessary.

"2nd Phase: the danger extends beyond the plant limits, CORDEC/SE being responsible for adopting control measures and coordinating actions. This phase is carried out in three stages, according to the degree of danger reached, to be defined by the National Nuclear Energy Commission (CNEN).

Possibilities

"If we put the two phases together, we have four possibilities in all:

"Possibility 1--an accident at the nuclear plant with the uncontrolled release of a radioactive substance into the environment, although limited to the Furnas area. The closing off of all access routes and areas close to the plant in addition to a situation of readiness by the Civil Defense System is advisable. There is no clear delimitation of time involved.

"Possibility 2--the escape of radioactive substances exceeds the limits of the Furnas property and presents danger to adjacent communities. The closing off of an area within a radius of 5 kilometers from the nuclear plant is indicated. The evacuation of people from that area, in addition to other measures of a police and administrative nature, is advisable. The time limit established is 72 hours after the occurrence of the event.

"Possibility 3--the escape of radioactive substances exceeds the limits of the previous possibility and affects an area within a radius of 10 kilometers from the nuclear plant. The evacuation of people from that area, in addition to other measures, is advisable. To be effected 8 days after the occurrence of the event.

"Possibility 4—here, the escape of the radioactive substances affects an area within a radius of 15 kilometers from the nuclear plant. The evacuation of people from that area, in addition to other measures, is advisable. The period involved is 15 days after the event.

"If we put the four possibilities and the tasks proposed for the Civil Defense System, we will see that they are very diversified. Following are some of them:

"Close off all areas affected by the escape of the radioactive substances from the nuclear plant;

"Evacuate the resident population to safe areas; provide them with medical-hospital care; provide them with food and shelter for the time necessary until the situation returns to complete normalcy;

"Promote the return of the evacuated population after the area has returned to normal;

"Safeguard public and private property in the evacuated area;

"Keep the public adequately informed during the emergency situation.

"Destroy all types of contaminated food and livestock in the evacuation area. Ban fishing and control the rivers and drinking water sources.

"CORDEC also expects each support agency to prepare the plan for the activities pertaining to it;

"Afterwards, the plan will be forwarded to CORDEC/SE;

"According to current legislation, the operation of the nuclear plant will be permitted only after the CNEN has approved the plan pertaining to the safety of the reactor and neighboring areas.

Little Time

"According to personal information obtained in CORDEC/SE, the plant will go into operation beginning in February 1981. This leaves the Civil Defense System very little time to collect data, analyze them and make appropriate plans.

"Added to that are some factors that contribute to aggravating the nuclear plant problem, making increasingly difficult the planning and execution of the civil defense work:

a) The plant complex is located on highway BR-101, between Rio de Janeiro and Sao Paulo. Depending on the type of accident and its proportions, access to site may be closed from the Rio de Janeiro side. Hence, planning is necessary that also combine the resources of Sao Paulo.

b) Access to the site by land is difficult and is accomplished exclusively by a single highway (BR-101) which presents serious problems during the rainy season. By sea, only shallow-draft vessels can manage it.

"The terrain and atmospheric conditions make it difficult to use helicopters, sometimes even making their use inadvisable; the only landing strip (for small planes) is in Prade, about 10 kilometers from the plant. Measures to expand that airport should be taken urgently. The construction of another airport, outside the 15-kilometer radius, is also a good option.

"c) A part of the population in the areas surrounding the plant, although not very large, is quite dispersed and difficult to locate in the woods and banana plantations that extend on all sides, over quite rugged terrain. One cannot count on their conscientious understanding because of their low cultural level. Access roads to those people are practically nonexistent.

"d) As has already been said, the consequences of good or bad planning will have international repercussions.

Protection System

"Due to the breadth of the problem delineated--a problem that, for the time being, is limited to our state, but one that will shortly be extended to the whole country--the president of the republic created the Nuclear Protection System (SIPRON), through Decree-Law No 1809 of 7 October 1980.

"In summary, the purpose of that decree is to insure integrated planning to coordinate joint action and the continued execution of measures aimed at taking care of the safety requirements of the Brazilian nuclear program and its personnel 'as well as the population and the environment' related to it.

"The Special Secretariat for Civil Defense (SEDEC) of the Ministry of Interior is a member of SIPRON in the area of protection of the population in emergencies."

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ANGRA TO RECEIVE FIRST ARGENTINE URANIUM SHIPMENT IN MARCH

Rio de Janeiro O GLOBO in Portuguese 29 Dec 80 p 10

[Text] Brasilia--Argentine Ambassador Oscar Camilion reported yesterday that the first shipment of Argentine uranium for the Angra dos Reis plant will arrive in March. According to the agreement signed by the two countries during President Joao Figueiredo's trip to Buenos Aires, Argentina promised to ship Brazil 120 tons of uranium a year in 1981, which is to be paid for with the production of the present Pocos de Caldas deposits.

Making a projection of the future of the binational relationship, the Argentine ambassador said he believed that, in terms of trade, the natural and artificial reasons that led Brazil to increase its exports and to keep its imports from Argentina stagnant will be examined.

"Those artificial factors will be reexamined and naturally removed," said Camilion, "although many Brazilian products are already incorporated into the habits of the Argentines."

The wave of Argentine tourists to Brazil, the result of the supervaluation of the peso in relation to the dollar will be adjusted to a new system if there is a change in the exchange rate through financial mechanisms such as a maxi-devaluation of the peso. The ambassador does not have any knowledge of the future decisions of the financial policy of the Viola administration but he admitted that if there are changes in that policy, there could be a devaluation of the peso, which would reduce the flow of tourists to Brazil and other countries.

This year, the trade balance closed with a favorable balance of \$300 million for Brazil. For the first time, the exports of Brazilian products to Argentina recorded by the Foreign Trade Department of the Bank of Brazil (CACEX) reached its first billion dollars, not counting the Brazilian products purchased by that country's tourists.

Although both countries are going through a period of economic crisis, Ambassador Camilion believes that both are in a position to overcome the situation "because the essence of the crisis, which is worldwide, is the transfer of funds from the majority of countries to a small group, namely, the oil producers.

"What draws Brazil and Argentina together," said the ambassador, "is that the two economies are large and are faced with similar problems."

The ambassador emphasized that all the agreements signed by the two presidents are being implemented. He cited the Nuclear Cooperation Agreement and the Garabi hydroelectric project, which will be ready in 2 years.

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FURTHER DELAY IN ANGRA-I OPERATION CITED, DENIED

Cals Cites New Delay

Rio de Janeiro JORNAL DO BRASIL in Portuguese 16 Dec 80 p 14

[Text] Even though it is 4 years behind schedule, it is still not known for certain when the Angra-I nuclear plant is going to go into operation, generating its 620 megawatts. According to Minister of Mines and Energy Cesar Cals, the current prediction is August 1981 but, depending on safety conditions, that may not happen until 1982.

The cost of Angra-I, envisaged at the beginning of the project in 1972 at \$300 million, has already risen to \$1.2 billion, which is equivalent to \$2,000 per installed kilowatt. The other units--Angra-II and Angra-III--are budgeted at \$3.4 billion each, with an installed kilowatt cost of \$2,600. That information was supplied by the president of Furnas, Licio Seabra.

Disagreement

The figures supplied by Furnas contrast with those furnished to the congressional investigating committee (CPI) by the president of the Brazilian Nuclear Corporation (NUCLEBRAS), Paulo Nogueira Batista, on 11 November of this year. According to him, the Brazilian nuclear program has an estimated cost, up to 1995, of \$13 billion for the installation of 10,000 megawatts. Up to 1990, the cost is \$7.5 billion.

Testifying before the CPI, Paulo Nogueira Batista compared the cost of the installation of hydroelectric plants during the period 1980-90 with that of nuclear plants. He said that in order to install 40,000 megawatts, the Brazilian Electric Power Company (ELETROBRAS) will have to invest \$40.2 billion, including the transmission lines. While NUCLEBRAS will spend only \$13.5 billion to install 10,000 megawatts. Perhaps the president of NUCLEBRAS has not updated the cost figures for each plant according to the Furnas figures, budgeted at \$3.4 billion each. It so happens--and that was not explained to the CPI by the president of NUCLEBRAS--that 90 percent of the technology used to install hydroelectric plants to generate 40,000 megawatts will be of national origin, whereas, nuclear installations depend exclusively on German technology, according to Brazilian contracts.

Replying to opponents of the Brazilian nuclear program in the CPI, the president of NUCLEBRAS, Paulo Nogueira Batista, said that "such is the vehemence of some opponents that it has even been said in the full Chamber of Deputies that the program would represent one of the greatest factors of inflation and of overburdening the foreign debt.

"In that connection," he said, "suffice it to point out that the total investment in the Brazilian nuclear program in 1981 represents only 1 percent of the overall expenditures of state enterprises and that the foreign debt contracted by NUCLEBRAS does not amount to 1 percent of the total Brazilian indebtedness in foreign currency." It so happens that the two plants in Angra dos Reis scheduled to go into operation in 1982-83 according to the original timetable, have not left their foundations.

Furnas Guarantees No Delay

Rio de Janeiro JORNAL DO BRASIL in Portuguese 23 Dec 80 p 19

[Text] The Angra-1 nuclear plant will begin to generate energy in March, when the fuel will be placed in the reactor, and in July it will be operating commercially. That pledge was made yesterday by the president of Furnas, Licinio Seabra, in announcing that tests of the plant ended this week and, according to him, "went well."

The president of Furnas said that he did not understand why Minister of Mines and Energy Cesar Cals reported that Angra-1 might be delayed 1 year, not beginning to operate commercially until 1982. "Perhaps he believes that problems can arise, but that is a bit of pessimism on the part of the minister," commented the president of Furnas. According to Licinio Seabra "thus far there isn't anything to divert us from that timetable."

Cooling

In the hot tests which ended this week, the components of the nuclear plant were subjected to pressure and temperature conditions similar to those they will have to stand when the plant is in operation. All of the electromechanical assembly of the plant was tested in that manner. The technicians activated pumps that produced heat, which produced steam to actuate the turbine, which turned the generator that will produce 14 mega-watts.

Now the components of the plant are being cooled and prepared for charging the nucleus (placing the uranium in the reactor), which will occur in March. The plant will begin to produce energy—initially, 10 percent of its capacity, a percentage that will be gradually increased until it will be producing at maximum capacity by July. The president of Furnas pointed out, however, that that will still be an experimental operation because problems may occur that will make it necessary to shut down the plant.

Investments

During 1980, Furnas invested 36 billion cruzeiros, 15 billion of which in the three Angra dos Reis nuclear plants (Angra-I accounted for 7.5 billion cruzeiros, and Units II and III for the remainder). For 1981, Furnas presented a proposal of 117 billion cruzeiros, assuming an inflation of 53 next year, according to Planning Secretariat (Seplan) instructions. Of that total, 63 billion are intended for the nuclear plants and 38 billion for the Itaipu transmission line. Of the amount slated for the nuclear plants, 26 billion pertain to payment of the equipment imported for Angra-II that will begin to arrive next year. The equipment, built by the German KWU, will have to remain stored at the project site for 3 years in view of the delay in the plant's timetable.

Licínio Seabra admitted that the 53 percent inflation figure for 1981 is optimistic but he said that there is an understanding with Seplan that if the inflation rate exceeds that forecast "corrective measures will be adopted" with regard to the investment budgets of the companies.

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BRAZIL

NAVY DENIES PLAN TO BUILD NUCLEAR SUBMARINES

Rio de Janeiro O GLOBO in Portuguese 30 Dec 80 p 5

[Text] Brasilia -- The director general of naval materiel, Admiral Albano de Aratanha, said yesterday that the report published by the French magazine LE POINT, regarding the alleged interest of Brazil in building nuclear submarines, was "pure speculation."

"We can't even get the financial resources to put the new reequipping plan into operation, let alone think about nuclear submarines," declared Admiral Aratanha.

And he concluded: "A nuclear submarine is something we plan to achieve by the end of the century, furthermore, Brazil is not in a position to build a nuclear vessel in the next 10 years."

Magazine Says There Were Contacts

Paris--by O GLOBO correspondent Any Bourrier--The magazine LE POINT published confidential reports in this week's edition according to which "the Brazilian Navy is proceeding with studies to build a nuclear submarine within the next 10 years. Brazil has already made the first discreet contacts with France in this regard."

French Defense Ministry sources questioned in Paris yesterday refused to confirm or deny the report. The ministry spokesman said only:

"We usually leave it up to the country purchasing the technology to take the initiative in making the first statements to the press, especially when it concerns a sensitive area such as the nuclear area."

It was not possible to obtain confirmation from the Brazilian diplomats in Paris because they are all traveling this holiday week. The Brazilian naval attache, Commander Claus Dieter Eichler, will not return from his holiday vacation until January.

France has been building nuclear submarines for 10 years. There are two types: strategic and attack submarines. The five submarines built in the Brest shipyards beginning in 1971 belong to the first category. They are: Le Redoutable, launched in 1971, Le Terrible, in 1973, Le Foudroyant, in 1977,

L'Indomptable, in 1977, and Le Tonnant, commissioned last May. All have highly enriched uranium reactors, a crew of 135 men and are capable of carrying 1 megaton of nuclear cargo, equivalent to 50 bombs of the type that destroyed Hiroshima. The first nuclear attack submarine, christened by Giscard d'Estaing in July of last year in the port of Cherbourg, is part of the SNA 72 program (Fourth Military Plan). Le Provence has a displacement of 2,670 tons submerged and 2,385 on the surface. It has an overall length of 72 meters, a crew of 66 men, is capable of sailing 180 days per year and carries 14 533-millimeter torpedoes of the Exocet type.

Military material specialists believe the Brazilian Navy might be interested in the first category, strategic submarines, since the purchase of attack submarines would be conceivable only if the Brazilian Armed Forces had a plan to build a complete nuclear force.

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REPORTED SUB PURCHASE SEEN AS FRENCH MANEUVER

San Paulo O ESTADO DE SAO PAULO in Portuguese 3 Jan 81 p 4

[Text] Rio--The report recently published by the French magazine LE POINT regarding Brazil's interest in purchasing nuclear submarines was described in Rio yesterday by a high military source connected with the technology sector as "a trial balloon or a way of French suppliers to pressure Brazil to conclude a protocol of intent in that regard." The possible negotiations were denied by Brazilian officials but the nuclear submarine is one of the items most cited in all purchase plans.

According to that same source, the Naval Operations Command has been conducting studies aimed at surveying all types of equipment available on the world market in order to obtain data that will make it possible to prepare a Brazilian plan. In that connection, informal probes were made in the supplier markets of France, Italy, the United States and Great Britain, including nuclear and conventional vessels. The strongest tendency in the navy seems to be the option for Italian conventional equipment, the submarine "Sauro"; but in view of the nuclear agreements signed with Germany, according to the same source, the French suppliers are pressuring Brazil to formalize the inquiry.

In all of those exchanges, what is envisaged is not the pure and simple purchase of equipment but agreements for joint construction similar to what was done with the frigates purchased from British shipyards. There is also the possibility of multilateral agreements.

For at least the next 10 years, Brazil will not be in a position to build or purchase nuclear-powered vessels, whether for the merchant marine or the navy. To reach that conclusion, expressed by Admiral Albano Aratanha, director of materiel, the Navy Ministry must surely have conducted studies on the basis of the supplies existing on the world market and on the information brought back by Brazilian missions that periodically visit the military equipment supply centers.

When the Brazilian naval authorities speak openly about the possibility of Brazil acquiring nuclear vessels, they stress that there are no technological or financial resources for an undertaking of that magnitude. And they point out that maintaining the conventional equipment is already quite burdensome for the national treasury. Behind the scenes, however, Brazil's need for more highly

sophisticated naval power is recognized, especially in view of the strategic role that Brazil plays in the security and control of South Atlantic routes, within the operational framework of the Inter-American Reciprocal Assistance Treaty.

The possibility of Brazil purchasing nuclear submarines was recently revived by a short report published by the French weekly, LE POINT, according to which Brazil was making discreet contacts in France with the aim of purchasing that type of materiel.

The report was officially denied by Admiral Aratanha. But, according to officers connected with that sector, the modernization of naval equipment is imperative as Brazil increasingly assumes responsibility for guaranteeing the security of the South Atlantic.

Soviet Presence

The role of the South Atlantic assumed greater importance than the existing historic one following the closing of the Suez Canal. The Mediterranean routes were transferred to the Atlantic, and even after the reopening of the canal those routes were maintained because the canal could no longer handle the draft of the supertankers that go from the Middle East to America and Western Europe. The so-called Cape route, the West's main supply artery, presently accounts for 80 percent of the oil and 70 percent of the strategic material that come from the East. A chart of the route for a single day in 1977 showed 1,245 merchant ships in movement, not counting those that were anchored at Capetown.

According to figures of the International Institute for Strategic Studies of London, that same year the Soviet Union maintained 60 ships and 175 submarines in the Atlantic, while it had only 6 ships and 1 submarine in the Indian Ocean. Ten years before, the Soviet naval commander, S. G. Gorshkov, had declared: "The Soviet Navy has become, in the broadest sense of the word, a long-range offensive, armed force. (...) Breaching the oceanic lines of communications, the special arteries that feed the military and economic potential of those countries (the Western countries) continues to be one of the missions of the fleet." Soviet influence grew following the decolonization of Africa; it has at its disposal ports such as Luanda (Angola), Berbera (Somalia), Conakry (Guinea) and four others in Mozambique. In addition, the Soviets have charted the ocean currents in order to establish locations not detectable by sonar equipment where nuclear submarines can be hidden.

Reequipment

The group that makes up the Local Operational Control Command (COLCO) meets every 2 years. It is comprised of the navies of Brazil, Argentina and Uruguay, as members of the complex organization framework set up on the basis of the Inter-American Reciprocal Assistance Treaty. COLCO's mission is to control and insure the efficiency of the shipping routes, and the group to which Brazil belongs is responsible for the routes in the South Atlantic.

As has already been admitted by Minister Maximiano da Fonseca himself, Brazil does not yet have a navy in keeping with the responsibility of that mission. Through the reequipment plan, the Brazilian authorities have been striving to improve its so-called floating resources, seeking supply sources in Europe and carrying out national projects, such as the research that is conducted at the missile center.

Today, the Brazilian Navy has 24 types of vessels, totaling 150,000 tons; a combination of national, U.S. and European ships. In addition, the navy will receive three survey ships and three training ships from the national shipbuilding industry. And negotiations have already been completed with Italy for the acquisition of the technology of a conventional-type submarine but more modern than the British. The contract calls for construction in the Brazilian navyyard, with completion scheduled for 1988.

Brazil Has Even Selected the Type: Medium-Sized and Fast

Brazil has already made its selection as to type for implementation of the program to reequip the submarine force: the vessel sought will be medium-sized, fast, equipped with a very sophisticated weapons system--including missile launching ramps--and, especially, will have a conventional propulsion system: a mixed system of diesel engines alternating with marine turbines.

That is the basic line that is being followed by the Navy Ministry, through the Rio de Janeiro navyyard, in the survey that is being conducted among suppliers all over the world. As of September 1980, it indicated an Italian consortium, the Trieste Club, builder of the submarine "Sauro," as the most cited for the formalization of a purchase contract with the transfer of technology and joint construction. Preliminary bids from the following also entered into that phase of preliminary consultations: France, with the Agosta; Great Britain, presenting a replacement--still in the planning stage--for the Oberon, with which the Brazilian Navy is presently equipped; and Germany, offering the IK-109, indicated as the most technologically advanced option. There is not yet a definite alternative.

The exclusion of a nuclear type is the result of a new tendency among the developed countries, which is beginning to mark a considerable return to conventional configurations.

General Alexander Haig, former NATO commander, defended that policy when he stated that nuclear submarines should be limited to the functions of vectors of atomic devices, with the others being responsible for fulfilling the missions of tactical superiority such as the defense of trade routes, for example. Furthermore, with the advent of extra-long-life batteries, partially rechargeable even undersea, "the use of a nuclear generator in submarines not intended for strategic functions becomes highly debatable," according to the analysis of a navyyard official.

The preference for the hybrid diesel-turbine propulsion system is also an indication of concern about the conservation of fuel inasmuch as the ministry is simultaneously sponsoring a study on the use of alcohol in the turbines.

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PROMISING URANIUM DEPOSITS DISCOVERED IN AMAZON REGION

Rio de Janeiro GAZETA MERCANTIL in Portuguese 18 Dec 80 p 1

[Article by Sergio Danilo do Rio: "Two Uranium Mines in the Amazon Region"]

[Text] NUCLEBRAS [Brazilian Nuclear Corporations] technicians of the district of Belem (PA) discovered two new uranium deposits, this time in the region of Monte Alegre and Alenquer, in the Amazon Region, it was reported yesterday in Rio to this newspaper by Geologist John Formann, director of NUCLEBRAS Mineral Prospecting. According to him, they are only promising indications and the new uranium find in Amazon Region should warrant priorities in prospecting in 1981 from the state company. NUCLEBRAS made other attempts to find uranium in the region and prospected the territory of Roraima without obtaining the expected results. In addition to the two new finds being analyzed by NUCLEBRAS, technicians are now studying the pre-Cambrian formation in the southern part of Para, says the geologist, near the Carajas mountain range. Next year NUCLEBRAS, which already has 236,000 tons of Brazilian uranium reserves under its control, is going to begin a new work front in Ceara to measure new promising uranium targets: Santa Quitéria and Groairas. Up to now, NUCLEBRAS has already identified a deposit of 122,000 tons of uranium in the region of Itaia (CE) in just one square kilometer. Twelve new test bores were sunk in 1981, according to Formann. Very optimistic with the work of mineral prospecting in uranium, Formann said that next year the first uranium ore concentrate plant will go into operation in Pocos de Caldas (MG), with an initial production of 150 tons and a capability of producing 500 tons of the mineral per year.

In 1981, NUCLEBRAS should also activate a program for the installations at the new Figueiras (PR) deposit, which according to Formann, should be producing in 1985 with reserves of 8,000 tons.

The important thing about the Brazil-Germany Nuclear Agreement is that it be fully complied with, said NUCLEBRAS director superintendent Jose Pinto, speaking about the delays also admitted by the FRG Ambassador in Brasília. From Brussels, our correspondent Brian Gould says that the KWU [Kraftwerk Union]--the supplier in the agreement with Brazil--is receiving orders from five powerplants in Germany itself. The nuclear program of that country is being revived after the war between Iran and Iraq placed the supply of petroleum in jeopardy. Those orders may compensate for the decline in deliveries to Brazil.

NUCON UNDERTAKES CIVIL CONSTRUCTION OF NUCLEAR POWERPLANTS

Rio de Janeiro JORNAL DO BRASIL in Portuguese 7 Jan 81 p 15

[Text] Brasilia--NUCON [Brazilian Nuclear Corporations [NUCLEBRAS] Nuclear Powerplant Construction Company, Inc] will also assume the civil construction work of the Angra 2 and Angra 3 nuclear powerplants this year, work which up to now has been the responsibility of FURNAS [Electric Powerplants, Inc]. The information was confirmed yesterday by NUCLEBRAS President Ambassador Paulo Nogueira Batista.

The money allocated for paying the costs of those two nuclear plants were not included in the budget of the electric sector this year and the CDE (Economic Development Council) will decide in its meeting today where the money for the nuclear plants will come from, and it will be transferred directly to NUCLEBRAS.

The ministerial source said yesterday that the budgets for both Angra 2 and Angra 3 in 1981 should reach something more than 51 billion cruzeiros, with 26 billion cruzeiros being provided by the government and the rest by foreign loans to be announced today by the CDE. The total money allocated to NUCLEBRAS in 1981 will be nearly 95 billion cruzeiros.

The transfer of the administration of civil construction work on the two plants from FURNAS to NUCLEBRAS will be accomplished throughout this year because NUCON is not yet completely structured for receiving that responsibility. Ambassador Paulo Nogueira Batista asserted yesterday, however, that the NUCLEBRAS subsidiary is already well structured and ready to handle the responsibility of building the two powerplants. FURNAS should continue with the administration of part of the work project having to do with Angra I, with the residential housing of Praia Brava and Mambucaba and the two hotels of Praia. NUCON will be left with the Itaorna guest house.

Renegotiation

The transfer of management of the civil construction work of Angra 2 and Angra 3 from FURNAS to NUCLEBRAS should lead to the renegotiation of all contracts and subcontracts having to do with the civil construction work of those two plants. The great difficulty resides in the difference in the type of contract FURNAS signed with the Norberto Odebrecht Construction Company, which is simply one of administration, while the contract to be adopted by NUCON contains cost and timetable guarantees.

The Odebrecht contract, although it has a value of around \$300 million for the basic contract, contains a variable cost aspect. The construction company, in its status as administrator, receives a commission of between 17 percent and 20 percent above costs in addition to also receiving a per-hour payment for its equipment used in the work. The price for leasing that equipment varies in keeping with its degree of sophistication. The most expensive are the Wyrth piledrivers which pound in the piles for the Angra 2 foundation.

The timetables and prices fixed are the standards established by the NUCON bylaws, approved by decree of President Joao Figueiredo nearly 2 months ago. Those guarantees, which will be given by NUCON to FURNAS, should in some way be compensated for in the contracts the NUCLEBRAS subsidiary will sign with contractors and, in turn, in the contracts the latter will sign with the subcontractors.

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BRAZIL

BRIEFS

INCREASED NUCLEAR INVESTMENT--The funds designated for establishing the nuclear infrastructure in Brazil, excluding the plants, will receive a real increase of 45 percent this year. They are earmarked for the reactor factory (Itaguaí) and the whole fuel cycle: the yellow-cake (uranium concentrate) factory in Pocos de Caldas; the fuel element factory in Resende; and the enrichment unit, also in Resende. Up to last year, the responsibility of the Brazilian Nuclear Corporation (NUCLEBRAS) was only to establish that infrastructure, with Furnas being responsible for construction of the plants. In 1980, 16.5 billion cruzeiros were allocated for that purpose, and in 1980, 44 billion cruzeiros. According to NUCLEBRAS sources, the real increase of 45 percent in the budget is due primarily to the speedup of work on the uranium enrichment pilot plant, which is scheduled to be completed in 1983. The company will also have to invest in the completion of the yellow-cake factory in Pocos de Caldas, which will be able to produce 500 tons per year by the beginning of 1982. [Rio de Janeiro O GLOBO in Portuguese 9 Jan 81 p 20] 8711

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BRIEFS

NUCLEAR AID TO IRAQ--French Prime Minister Raymond Barre said today that the nuclear aid France extends to Iraq is for peaceful uses only and that his conscience is clear regarding fears that Iraq will develop a nuclear bomb of its own. In reply to a question by our correspondent in Paris, Yo'av Toqer, Raymond Barre said the air attack on the Iraqi nuclear reactor did not change the firm arrangements that guarantee civilian use only of the Iraqi nuclear reactor. [Text]
[TA202015 Jerusalem Domestic Television Service in Hebrew 1900 GMT 20 Jan 81]

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ISRAEL SAID FEARFUL OF NUCLEAR WEAPONS

Amman AL-DUSTUR in Arabic 28 Dec 80 p 12

[Commentary by Jabir: International Horizon: "The Rekindled Campaign and the Nuclear Option"]

[Text] During his attack on France for its nuclear cooperation with Iraq, Shimon Peres, the Israeli opposition Labor Party leader, said that many Middle Eastern nations will possess nuclear power within the period of a decade and that the region will be resting on top of a nuclear volcano.

It seems that Peres and other Israeli leaders do not want anyone to possess nuclear power, even if it is for peaceful purposes--while Israel steals a ship on the high seas carrying a load of uranium and changes its course before the eyes of the world, directing it to the violated shores of Palestine.

Israel is cooperating with the racist Government of Praetoria in the field of nuclear arms production. It gets from it uranium and offers in return for that technical expertise. News sources, including reliable American sources, speak of Israel's possession of more than ten nuclear bombs. A former senior official of the American Central Intelligence Agency said in an interview I conducted with him recently that the United States signed a secret agreement with Israel in 1956 allowing it in accordance with it [the U.S.] to develop nuclear weapons in return for its withdrawal from Sinai. God knows what new promises Israel got from the Egyptian regime and from Washington in return for its evacuation from the Sinai oil [fields].

Beyond all this, Israel is among the few nations who refuse even now to sign the Nuclear Non-Proliferation Treaty.

Why then do the Zionists demonstrate this high degree of discomfort whenever talk of Arab work in the nuclear field appears on the horizon? And why the vicious attacks on Iraq and France in spite of the announcement by the two that this cooperation is founded on the shared understanding to limit the use of atomic material to peaceful purposes?

The answer is that Israel fears nuclear arms as much as it longs to possess these arms. One atomic bomb in the Arabs' possession guarantees the annihilation of Israel in essence: 100 bombs owned by Israel cannot ensure the elimination of an Arab nation spread over millions of square kilometers and bringing together tens of millions of human beings.

SOUTH AFRICA

BRIEFS

LONG-TERM URANIUM PLAN--Taipei--The president of the Taiwan Power Company, Mr Chen Lan-Kao, left for South Africa yesterday to discuss a long-term supply of uranium by South African suppliers. The Taiwan Power Company signed a contract with a South African uranium fuel company last March to buy 4,000 tons of uranium, which will be delivered from 1983 to 1987. To ensure adequate supply of uranium fuel until 1990, the Taiwan Power Company is looking for more supply of the material, according to informed sources. [Text] [Johannesburg THE CITIZEN in English 22 Jan 81 p 18]

CSO: 5100

SIX YEARS' SUPPLY OF URANIUM ON HAND

Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German 16 Dec 80
p 1.

[Article: "Six Years' Uranium Supply—Equivalent to 130 Million Tons of Hard Coal Units"]

[Text] Frankfurt, 15 Dec--At present the FRG has uranium stockpiles equivalent to energy valued at 130 million tons of hard coal units [SKE] when utilized in today's light water reactors. These uranium reserves are comprised as follows: 480 tons of enriched uranium in FRG uranium reserves, corresponding to 44 million tons of SKE; stocks of utility companies amounting to 670 tons of enriched uranium, corresponding to 59 million tons of SKE; 300 tons of enriched uranium in nuclear industry stockpiles, corresponding to 27 million tons of SKE.

These uranium stocks of 1,400 tons would suffice to continue operating the nuclear power plants currently in operation for another 6 years. Part of these reserves are undoubtedly due to the delays incurred in nuclear power plant construction. But even in view of increased utilization of nuclear energy, the normal uranium reserves and those accruing from production engineering will suffice to continue operation of the nuclear power plants for another 3 to 4 years. In addition, the utility industry has uranium reserves abroad at its disposal, and German mining companies have access to natural uranium through subsidiaries. When uranium is enriched in the FRG in the near future, this interim process of enrichment as well will be accomplished within the country. In today's reactors only 1 percent of the energy content of the uranium is utilized.

If the uranium stocked today were used for advanced reactors, an energy supply system completely independent of imports could be established. When utilized in advanced light water reactors, the present uranium stockpiles add up to 650 million tons of SKE; when utilized in breeder reactors, today's national uranium supplies would amount to a fantastic 8 billion tons of SKE.

These figures show that the characteristics of nuclear energy are such that the fuel will last for an extended period and requires very little storage space. Due to the capital intensity and increased usage of nuclear power plants and of the entire nuclear engineering industry, nuclear energy is becoming an exclusively domestic source of energy.

For today's reactors, however, imports of natural uranium are very low. For a nuclear power plant of the Biblis category, which generated 8 billion kilowatt hours of nuclear power annually, some 200 tons of natural uranium have to be imported. This corresponds to DM 20 million. If this power were generated with imported coal in a coal power plant, 2.7 million tons of hard coal would be required, costing DM 270 million on the world market. Generation of this power in an oil power plant would require DM 900 million annually, taking the present prices for oil into account. With an increase in the utilization of advanced reactor systems and a closed nuclear power cycle, less and less foreign exchange will be required for nuclear energy utilization, with requirements approaching zero in breeder reactor systems.

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SAFETY OF GARIGLIANO POWER PLANT ATTACKED

Naples IL MATTINO in Italian 17 Dec 80 p 15

[Article by Michele De Simone: "Radioactive Leaks?"]

[Text] Flooding of the river in November, invading the slag storage basins, caused "cesium 137 to be carried onto the fields. Denunciation made by Committee for Public Health.

Sessa Aurunca--Another clamorous initiative by attorney Carlo Marcantonio Tibaldi, the "great accuser" of the Garigliano electronuclear power plant who, after having denounced to the magistrature last May those who were presumably responsible, politically and technically, for activating the power plant termed "the horrendous death factory," has again taken up paper and pen to register another complaint with the judicary organizations.

This time the demand of the bellicose attorney, the mainstay of the Castelforte Committee "for Public Health," is appealing--also in relation to post-earthquake problems--for the precautionary seizure of the power plant and the immediate removal of the radioactive waste deposited. The petition was sent to the local magistrate courts of Sessa Aurunca and Minturno, the offices of the attorneys of the republic of Santa Maria Capua Vetere and Latina and the office of the attorney general of Naples.

On 5 December Tibaldi had also written to Commissioner Zamberletti drawing his attention to the precariousness of the environmental situation in the area of the Garigliano plain and suggesting the possibility of using the area to relocate "evacuees" who were victims of the 23 November earthquake.

Aside from concern for the effects of telluric shocks on the power plant's delicate structures--a development which had not recurred for several years after the last incident--in the week just preceding the seismic catastrophe a further precarious situation had been ascertained in that area.

Coincidental with the meeting on the subject, "How Safe Is the Garigliano Power Plant?" held in Castelforte on Saturday, 14 November, the river in Latium overflowed and flooded the Majano area, precisely where SEMN [National Electronuclear Power Plant] is being built. For anyone who, like the writer, happened to be on the Castelforte hill overlooking the Garigliano plain during that disastrous event, the power plant's concrete and steel "ball" must have appeared as a floating buoy at the edge of the bend in the stream which had completely overflowed its riverbed.

There is obvious concern that the flood waters may infiltrate the ponds where radioactive waste is stored, even though this was denied by experts in attendance.

A few days later, after first "murmurs" then "outcries," the frightening "blending" of the river waters with those of the storage ponds--which were to "provide for" the eternal repose of the radioactive waste--was officially acknowledged even though "minimized" by the unexpected seismic event.

According to attorney Tibaldi's denunciation, based on consultations with physicists from the University of Rome, the subsequent receding of the waters after the flood would allegedly transport a "cocktail" with the savor of "rem," the unit of measurement of radioactivity. The CNEN [National Nuclear Energy Commission] staff, quickly assembled, while giving the broadest assurance to Sessa Aurunca's town council and other organizations closest to the delicate situation, could not refrain from pointing out in a telegram that the receding of the waters had "particularly deposited cesium 137 on the land."

"At a time when it is officially confirmed that there has been a radioactive deposit of cesium 137," attorney Tibaldi argues, "we cannot exclude the deposit of other radioactive materials, like deadly plutonium, on the environment, even if in a minimal amount." To support his assertion, attorney Tibaldi refers to the death of 25 buffalo belonging to a breeder who has a dairy along the Domiziana; they died after having eaten grass "polluted" by the passage of waters coming from the radioactive waste deposits.

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ITALY

BRIEFS

RADIOACTIVE WASTE PROCESSING COMPANY--CIPE (Interministerial Committee for Economic Planning) has authorized the joint establishment by CNEN [National Nuclear Energy Commission] and the nuclear division of AGIP [National Italian Oil Company] of a company to be called NUCLECO. It will be responsible for handling radioactive rejects of low and medium activity. CNEN will have 40 percent of the shareholdings and AGIP 60 percent. Rejects will be treated by the company close to where they are produced and under the control of the CNEN directorate for safety and health protection. However, in cases of very limited production (for example, hospitals which conduct experiments with radioactive material), the rejects will be removed and treated at the nearest NUCLECO center. [Text] [Milan ENERGIA NUCLEARE in Italian Aug-Sep 80 p 278] 8568

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